

**A \$250 PRIZE FOR A WET-GRAIN CONVEYING SYSTEM.**

The Anheuser-Busch Brewing Association of St. Louis contemplates the installation of apparatus for the purpose of conveying brewer's wet grain, or mash, from the mash tanks located in the brew house to the grain-drying house, which is located about 1,700 feet from the brew house. The relative locations are shown in Fig. 1. Inasmuch as there has been much discussion as to the most economical and satisfactory method of conveying the wet grain, the Anheuser-Busch Brewing Association has decided to invite mechanical engineers to submit plans and specifications covering equipment best adapted in their judgment for the purpose. After these plans and specifications have been received and examined by the management and engineering department, the Brewing Association will award a prize of \$250 to the engineer whose plans the management decide to adopt.

We will give in this article a complete description of conditions and sufficient data, that the case may be readily understood by engineers who may wish to submit plans and specifications.

The material to be conveyed is known as "brewer's wet grain." This wet grain is made from malt and rice in the mash tanks in the brew house. The wet grain weighs about the same as water, and contains about eighty per cent of water as it comes from the mash tanks. It must be conveyed at the maximum rate of 100,000 pounds per hour. At this writing the wet grain is loaded into cars, which are switched to the Dried Grain Department, where the wet grain is taken from the cars and dried.

There is now in course of construction a tunnel extending from the brew house to the machine house on Second Street, which is adjacent to the grain-drying department. The dimensions of the tunnel between the brew house and the Second Street ice plant are 10 feet wide and 10 feet high, with a circular top having a 5-foot radius, all inside dimensions. In this tunnel there will be installed ammonia pipes, electric cables, etc., but there will be available space for pipes or other equipment for conveying the wet grain.

The mash tanks are located on the second floor of the brew house. The bottom of the tunnel is about 44 feet above the level line where it leaves the brew house, and is about 6 feet above the level line where it enters the Second Street machine house, or a drop of about 38 feet in the entire length of the tunnel, as indicated in Fig. 2.

As will be seen from Fig. 1, the grain-drying house is separated from the Second Street machine house by railroad tracks. It will therefore be necessary to elevate the mash at the end of the tunnel through a distance of about 50 feet, and carry it horizontally across the tracks at the grain-drying house. At the grain-drying house there will be a drop of 15 feet where the wet grain will discharge into cars. From these cars the wet grain will be handled by the present car-unloading machinery.

It may be considered advantageous to construct a separate tunnel from the machine house to the end of the main tunnel, under the tracks of the grain-drying department, in which case it will be necessary to elevate the wet grain to the car level.

The grain-drying plant is located along the railroad

grain it should be stated that there is no objection to mixing the wet grain with water, but means must be provided for eliminating the greater part of the water mechanically after the mash has reached the grain-drying department.

For purposes of estimating the cost of operation, it may be assumed that the cost of water is five cents per thousand gallons, and the cost of electric power is two cents per kilowatt hour.

Engineers who submit plans and specifications are requested to give details of the apparatus which they propose, and of sizes of pipes, conveyers, or other apparatus used. They are also asked to prepare an estimate of cost of installation, and to give an estimate of the cost of operation.

In all cases engineers are requested to consider electric motors as the motive power, the system in use being the direct-current system, 220 volts. There is ample reserve capacity for furnishing electric power for this new conveying system.

In submitting a report with plans and specifications on the above-described installation, engineers are required to make their report in the following order:

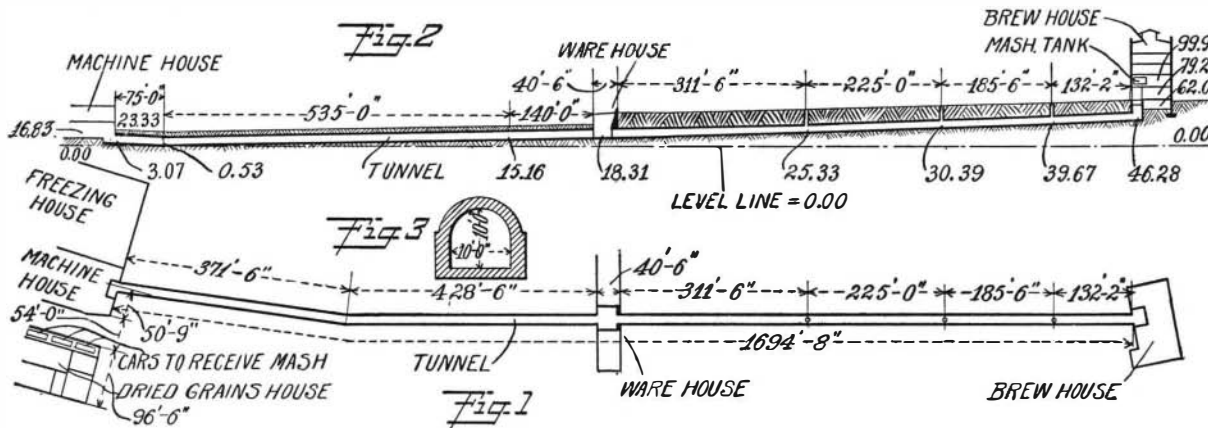
1. General type of system recommended, sizes and details of apparatus recommended, with such drawings and specifications as engineers think necessary.
2. The power required to operate the system, and the estimated cost based on the price of power and water given above.
3. Cost of labor necessary to operate the system.
4. Estimated cost of installation of the system.
5. State experience with the apparatus recommended.

The management of the Brewing Association will

give consideration to all reports sent in answer to this invitation, and as stated above will award a prize of \$250 to the engineer whose plans they may decide to adopt.

The Brewing Association trusts that this problem may prove of interest to a large number of engineers, and that many replies will be received.

All reports with plans and specifications must be submitted on or before April 1, 1909. Adv.



GROUND PLAN OF THE BUILDINGS.

track, and has a side track under cover, and a loading platform alongside of the side track. With the new arrangement of conveying, one or two cars will be used to receive the wet grain, and the cars will be shifted to the proper position for unloading.

The wet grain as it comes from the tank is mixed with water, a considerable quantity of which drips from the cars as they are switched to the grain-drying house.

For plans proposing a system of pumping the wet

**RECENTLY PATENTED INVENTIONS.****Electrical Devices.**

**ELECTRIC SWITCH.**—B. W. MACY, Orlando, Fla. The more particular object of the invention is to provide a type of switch controllable by motions of a hand crank and adapted to transpose, merge, and separate a number of distinct circuits at will, so as to greatly simplify the wiring. It may be used in connection with electric lights and house wiring, in such manner that the various electric lamps in the house may be lighted either severally or collectively, and any group or combination of such lights, chosen arbitrarily at will, may be lighted to the exclusion of the other lamps.

**ELECTRIC-TERMINAL CLIP.**—G. MCINTYRE, Jersey City, N. J. The object here is to provide a clip which is durable in construction and arranged to permit convenient attachment to the binding post of an electric apparatus, and to insure a strong and exceedingly reliable contact for the proper transmission of electric energy.

**Of Interest to Farmers.**

**MARKER FOR CORN-PLANTERS.**—D. LOUDENSLAGER, Rising City, Neb. The aim in this case is to provide a double row marker which may be readily adjusted to corn planters now on the market, the disks of the marker being adjustable so that they may be spaced apart to correspond with the width of the planter. By its use the operator is enabled to keep the rows straight and equal distances apart.

**CORN-TESTING CABINET.**—C. B. JOSLIN, Manchester, Iowa. The invention refers more particularly to a cabinet adapted to support a plurality of ears in separate compartments; and later a plurality of germinating cups. The number of cups corresponds to the number of ears, so that a few kernels may be removed from each ear and placed in the corresponding cup, and after sprouting, the different seedlings may be identified with the ear from which the kernels were taken.

**TRANSFER APPLIANCE FOR BEET-DUMPS.**—F. L. PICKETT, Rocky Ford, Colo. This appliance is for use in connection with beet dumps for reloading on the grower's wagon, dirt screened from sugar beets, and by it, avoiding the necessity of piling up the dirt at the dump and thereafter handling the same by hand and weighing it, usually entailing services of a special man at the dump for this purpose.

**Of General Interest.**

**TAPE-MOISTENER.**—F. E. FRANCIS, New York, N. Y. The invention relates more particularly to that type of construction in which there are provided means for supporting a roll of tape, a moistening surface over which the tape may pass as it is removed from the roll, and a cutting or tearing edge by means of which the moistened portion of the tape may be separated from that remaining on the roll.

**DISPLAY APPARATUS.**—W. F. ALLERT, New York, N. Y. One object of this invention is to provide a simple, inexpensive, and efficient display apparatus which is attractive in appearance and compact in form, which can be used for displaying various kinds of merchandise in shop windows, on store counters, and in other places where such exhibits are necessary, which is capable of a plurality of adjustments, and which is inexpensive to manufacture.

**Hardware.**

**PLANE.**—W. L. FISCHER, Oroville, Cal. The purpose of this invention is to provide a construction capable of making a smooth cut extending the full width of the plane, with the least possible effort on the part of the user. The plane makes it easy for the cutting edge of the blade to be set parallel to the plane-base; and other features of construction which especially adapt the plane for rabbeting and planing floors.

**INSTRUMENT FOR SLAUGHTERING ANIMALS.**—H. BERGH, New York, N. Y. The instrument is for use in slaughtering animals, notably cattle, and is arranged to permit of forcibly projecting a javelin into the brain of the animal with a view to produce almost instant and painless death, thus rendering the slaughtering humane and obviating any misdirected or abortive blows against the head of the animal.

**Heating and Lighting.**

**BOILER-CLEANER.**—H. C. FABRI, Sidhoardjo, Soerabaya, Java. The cleaner has adjustable steam conduits provided with a plurality of nozzles arranged to be directed toward the boiler tubes and permitting steam to escape in jets to remove the soot, ashes, and other accumulations upon the tubes, and further having means for introducing steam into the conduits, and means for adjusting the conduits to direct the steam jets in different directions, the conduits being located in recesses in walls of the boiler to protect the conduits from gases of combustion.

**Household Utilities.**

**FOLDING CHAIR.**—O. W. POTTER, Wauconda, Ill. This invention more particularly applies to folding chairs such as are especially adapted to be removably secured to the walls of a room or hall, and which have folding seats and front legs. It is inexpensive to manufacture and can be used either secured to a wall or as an ordinary folding chair.

**HYGIENIC EATING UTENSIL.**—C. M. DALY, G. A. WEIDHAUS, and W. S. HENRY, New York, N. Y. The invention pertains to improvements in eating utensils adapted to lunch counters and the like, and relates more particularly to a construction involving a plurality of utensils adapted to be dispensed from a suitable container, and so simple and inexpensive to manufacture as to permit of their being thrown away after being used once.

**Machines and Mechanical Devices.**

**DISPENSING-CONTAINER.**—W. A. KIRKPATRICK, Abbyville, Kan. The object of the invention is to provide a container having means for holding the straws in a closed receptacle, thus obviating dust and dirt coming in contact with the straws. Further, to provide means for releasing one straw at a time and further means for catching the straw thus released and holding it so that it may easily be taken by the user.

**MECHANISM FOR OPERATING CIRCULAR NEEDLES.**—J. LARSEN, Silkegade 13, Copenhagen, Denmark. Mr. Larsen's invention relates to a sewing-machine using a curved needle to which is imparted a movement so that it becomes possible to force the needle through the sole leather without boxing holes previously, thereby making it possible to attach the soles without any preliminary work or treatment whatever.

**SELF-PROPELLED TORPEDO.**—A. E. JONES, Fiume, Austria-Hungary. The metal cage forming the casing, and the cage of the motor, comprises at the lower part an excess thickness extending throughout its entire length, in order that by increasing the stability of the torpedo and the rigidity of its shell in this way, the steadying ballast and the angle irons for reinforcing the casing may be dispensed with wholly or partially, with the object of diminishing the weight of the torpedo, while rendering the casing capable of resisting corrosion for a longer period.

**FLYING-MACHINE.**—H. BEA, Jersey City, N. J. The aim in this case is to provide an aeroplane or flying machine of the heavier-than-air type, and arranged to permit the operator to readily control the working parts for rais-

ing, lowering, and propelling the machine in the desired direction, maintaining it in equilibrium and allowing easy landing without shock or jar.

**CIGAR-LIGHTER.**—J. C. RAYMOND, Brooklyn, N. Y. In the handle of the device—which may appropriately have the general form of a pistol—a reel of wick and a reeled strip of paper caps are arranged, the wick and cap strip being guided to the perforated forward end of the device. The movements of a trigger are made to advance the wick and cap strip and explode the cap.

**Railways and Their Accessories.**

**BALANCE-VALVE.**—B. F. O'BRYAN, Collinsville, Ala. The valve is more especially designed for use in locomotive engines, and arranged to secure an easy movement of the valve with the engine running or dead, and without danger of bonding, and to allow of conveniently and quickly replacing a worn out bushing in which the controlling piston valve travels.

**SAFETY DERAILING DEVICE.**—F. PÉLISIER, Gonaives, Haiti. The device is such as carried by locomotives or cars for use in preventing accidents from collisions. The object is to derail a car or locomotive to which the device is attached. It embodies an arrangement for normally supporting a derailing skid near the rail just in advance of the forward truck.

**Pertaining to Recreation.**

**TOY BASKET-BALL DEVICE.**—S. J. HARTNELL, Oswego, Oregon. The device when in use partakes of the character of the basket ball game, and is particularly well adapted for the amusement of young persons; the successful manipulation of the toy requiring dexterity and skill, training the hand and eyes, affording agreeable exercise, and also amusement to the players and those interested in the game.

**Pertaining to Vehicles.**

**SHOCK-ABSORBER.**—G. R. ROGERS, New York, N. Y. The invention relates more particularly to a shock absorber including an inflated pneumatic cushion acting in conjunction with the springs of the vehicle. The object is to provide a pneumatic cushion and inclosing casing therefor, so constructed as to render the absorber readily adaptable to any form of vehicle already in use.

**NOTE.**—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.