

with coils of steam pipe on the floor inside, and a wire screen of one-fourth inch mesh forming a drying frame above the coils. The principal danger in these dryers being lack of ventilation, there is usually a fan, outside or inside, for forcing air through the mass of stock lying upon the drying frame or screen. In this instance, it will be noted that, while there was a fan in connection with the dryer, it was not in operation while the cotton was in process of drying, and hence there was a lack of the needful ventilation which tended largely to create spontaneous combustion in the mass. This was an important point not brought out at the trial.

This steam-dryer was in use among cotton and woollen mills of the New England States many years ago, but proving such a prolific source of fires it was tabooed by the National Board of Fire Underwriters of the United States as long since as June 12, 1867, so that its subsequent use "in or near" any mill rendered such mill uninsurable under the National Board tariff: the result being that the steam-dryer has been banished generally from the chief manufacturing establishments in the United States as a matter of safety.

The danger in using the steam-dryer is supposed to arise from two sources: first, the accumulation of very inflammable gas generated by heat during the process of drying and confined under the stock upon the drying frame, leaving the mass in a very combustible condition at all times when in operation; and, second, from the constant dropping of particles out of the mass, through the screen, upon the heated steam-pipes below and there taking fire and communicating flame to the combustible gas, as well as to the superincumbent mass itself; and that heated steam-pipes will thus communicate fire to such small particles, and even to wood itself, when in contact, is no longer a question of doubt.

DRYING OF COTTON A SPECIALLY HAZARDOUS OPERATION.

While the drying of any inflammable subject upon a steam-dryer is attended with more or less danger, the drying of cotton, in any condition, is a peculiarly hazardous operation, for it is at once the most inflammable and combustible subject known to commerce, and once on fire it can seldom be extinguished until it burns itself out. It will ignite readily from heated steam-pipes in steam-dryers, particularly after the underside of the batch, next to the screen on the drying frame, becomes "matted" or "caked," as it will always do, especially when damp; and it is a well-known fact, in this connection, strange as it may seem, that the more moisture there is in the cotton, the more quickly will it "mat" or "cake" upon the screen; and when so "matted" or "caked" it is in a condition much more liable to ignite from continued heat than when more loose and open, so that air can penetrate the mass. And just here, as we learn from the evidence at the trial, we have the exact condition of the cotton in the dryer at the time the fire was discovered. The cotton was put into the dryer wet. The steam coils were heated. The ventilating fan was not running, hence ventilation for the mass was not forthcoming. Is it any wonder that fire ensued? It would have been a marvel if it had not. Another material point not noted?

Query.—Was this drying of wet cotton a process of tanning?

INFLAMMABILITY OF WOOL AND COTTON.

Under equal conditions, wool requires a higher temperature to ignite; is of slower combustion, and of much less degree of flammability than cotton, so that by quickly

spreading out a pile of burning wool on the floor, the fire can usually be easily extinguished; while, on the other hand, a pile of loose cotton, under similar circumstances, once on fire, can seldom if ever be extinguished.

Wool in bales, tightly packed, would ordinarily be but partly charred for a few inches only on the outside of the bale, and could be easily extinguished, while a cotton bale, once on fire, becomes a very dangerous element, for in charred and partly burned cotton there lurks a hidden danger; heat or smouldering fire may remain inside the bale for a long time, when to all appearance outside the fire is extinguished; yet flame may suddenly burst out on the admission of fresh air to the interior. This has been proved by dire experience many times, especially where salvage cotton from fires has been repacked and stored, in warehouses which mysteriously burned shortly afterwards.

Edward Atkinson, the well-known president of the Boston Manufacturers' Mutual Ins. Co., says: "Fire lurks in a cotton bale for weeks. The cotton which was injured somewhat over a year ago in Biddeford, Me., was moved to South Boston for sale. The fire broke out again more than once, while at South Boston, being made ready for sale. It was then sold at auction. The fire broke out in one parcel while it was on the cars being carried away; and in another parcel after it had been received at a factory where it was to be used. The latter outbreak was, I think, thirty days after the original fire."

In a southern city on a wharf containing several hundred bales of burning cotton, some were thrown into the water and actually burned up there. It seems almost impossible to put out a burning cotton bale; the closer it is packed the faster it seems to burn, and that directly inwards, of which numerous examples can be cited.

Under these circumstances the question arises: "Was not this drying of another person's cotton a self-evident 'increase of hazard,' and a very material one, over the ordinary occupancy of the tannery?"

In another article we propose to further review this case under its legal aspects.

A THREAD-BARE THEME.

It is not the policy of the co-operative advocates to include the fees and dues, etc., as a part of the expenses of the insurance they furnish; yet these fees and dues form part of the cost, and should be added to the assessments. If we add these and incidental expenditures, the cost of the counterfeit insurance will equal the cost of the genuine article.

The value of the two kinds will not bear comparison. The co-operative insurance is forfeited by failure to pay one assessment; the old line policy is non-forfeitable. The co-operative certificate does not undertake to pay its face value; the old line policy is an agreement to pay a specified sum. If a man withdraws from the co-operative he receives nothing for all that he has paid in; if he withdraws from an old line company, he can procure a paid-up policy, or surrender his policy for its cash value, or his insurance will be extended according to the reserve on it.

The real cost of assessment insurance is dexterously concealed by the system of fees and annual dues, and the ostensible cost is the amount of assessments. The apparent value is the amount of the alleged insurance; the real value can only be determined when the certificate matures by death. There is a possibility that the certificate will be paid in full—if the member dies soon; the probability is, that the certificate will be scaled and the heirs paid only a portion of their just dues, and this probability is based on the experience of a thousand living and dead co-operatives. These declarations cannot be gainsaid. The man who puts his faith in pass-the-hat insurance does deliberate violence to his common-sense, compromises with his sense of duty, and jeopardizes the welfare of his dependents.—*Cant. Review*, San Francisco.