

MUELLER

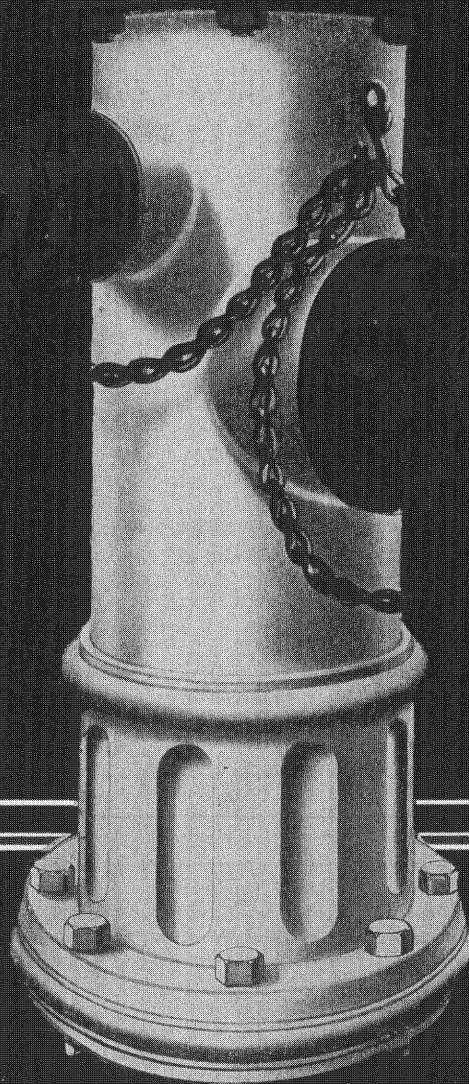
COLUMBIAN LINE

FIRE HYDRANTS
GATE VALVES
VALVE BOXES
DRILLING MACHINES
TAPPING SLEEVES
TAPPING VALVES

*American Waterworks
Association*

STANDARD SPECIFICATIONS

CATALOG
A-200

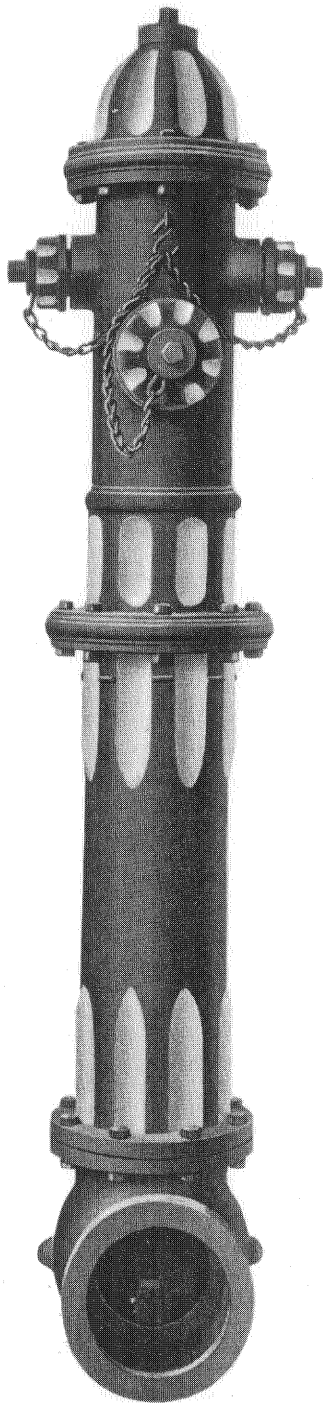


MUELLER CO.
CHATTANOOGA TENNESSEE

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The trim, sturdy outward appearance reflects the quality construction within.

FIFTEEN STEPS AHEAD!

1. SELF OILING . . . Perpetual; automatic—ends all lubricating troubles.
2. NON-FREEZING . . . Top sealed away from water zone. Positive dual drain valves. Bronze weather cap protects bearing surfaces.
3. NO CORROSION OF WORKING PARTS . . . All parts are either bronze, isolated from water, or protected by lubrication.
4. NO BINDING OF VALVE STEM . . . Ball joint packing gland and follower prevent binding strain.
5. NOZZLES POINTED TO ANY DIRECTION . . . Safety flange permits swiveling barrel to any degree of a circle.
6. EASY SEAT REMOVAL . . . Bronze to bronze threads in shoe. All parts removable through top.
7. FULL FLOW . . . No barrel obstructions to cause friction losses. Sweeping nozzle curves.
8. NO BARREL BREAKAGE . . . Economically replaced safety flange and coupling protect vital parts.
9. NO LEAKAGE OF SEAT RING THREADS . . . Everlasting copper gasket prevents it.
10. NO SHUTTING OFF OF WATER . . . Shut off only when main valve is removed.
11. NO FLOODING OF STREETS . . . Compression type main valve is held seated by water pressure.
12. EASILY LENGTHENED . . . Extension sections provide for raised grade levels. No digging, no water cut-off.
13. SIMPLE PACKING ADJUSTMENT . . . Removal of four hood bolts gives access to packing nuts.
14. DURABLE MAIN VALVE . . . Special chrome-tanned leather. Waterproof, cut-resistant. Has double the life of oak-tanned leather.
15. NO DIGGING . . . A truly permanent installation.

Listed above are fifteen of the many points of the MUELLER-COLUMBIAN hydrant design and construction.

In developing these improvements, every strong point of former Columbian construction has been made still stronger, while retaining that simplicity of design which has been responsible for the excellent service records of Columbian products.

These advanced features have been thoroughly tested in actual water works service. In fact, leading engineers and water works men throughout the country have contributed to the final development of this hydrant by naming the difficulties they have encountered, with suggestions covering the method of overcoming them.

MUELLER-COLUMBIAN representatives are located in every section of the country. New materials and necessary replacements may thus be ordered quickly and conveniently.

Mueller presents the Columbian Improved Fire Hydrant to you with the assurance that its maintenance cost will be the lowest and its efficiency as a piece of fire-fighting equipment the highest.

On the following pages will be found a minute description of each part, each function, and the flexibility of design which will mean much to your city through the years.



EXTERIOR FEATURES

In exterior appearance the MUELLER-COLUMBIAN Improved Fire Hydrant is designed to meet the most exacting tastes, at the same time retaining a sturdiness characteristic of its rugged internal working parts.

The extra large diameter of the hydrant barrel adds to its attractive appearance and causes the MUELLER-COLUMBIAN Improved Fire Hydrant to stand out prominently.

Barrel, bonnet, and nozzle caps are excellently balanced in grilled design. Note especially that the grilled section of the hydrant barrel forms an extra strength of section at that point to provide resistance to traffic hazards and to emphasize the strength at this pivotal point in connection with the safety flange feature.

The extreme top of the fire hydrant is capped by a heavy bronze operating nut and solid bronze weather cap of large proportions.

The chains attached to nozzle caps are of extra length, twisted, heavy construction and formed around each nozzle cap with definite clearances to prevent any tendency to "hang."

Both bonnet flange and Safety Flange are of the concealed type, with attractive ogees, —not the butt type commonly found.

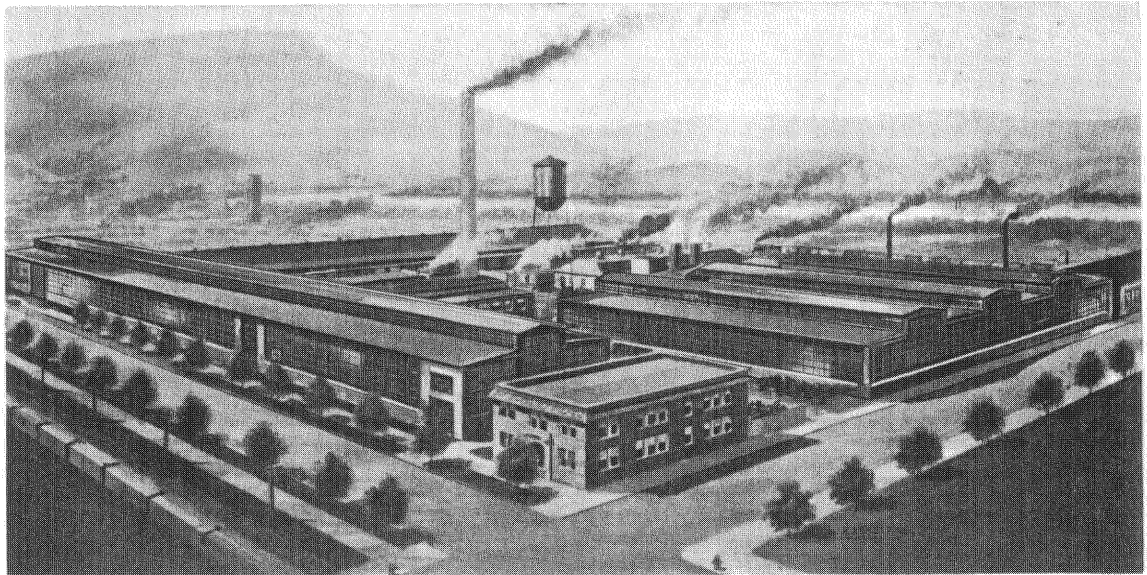
MUELLER-COLUMBIAN Improved Fire Hydrants will be enameled any color (or colors) specified, thus enabling you to match existing standards in your City. Unless otherwise specified on your order, they will be coated above the pavement line with red lead and primer and special high grade metallic aluminum bronze, with the exception of the bonnet and nozzle caps, which will have as a last coating a weather-proof enamel in fire hydrant red. This combination of color and placement have an extremely high visibility both by day and by night.

This process also offers tremendous resistance in communities where chemical action from surrounding industries have a dulling effect on the coating of Fire Hydrants with resultant low visibility.

Other colors frequently used include orange, yellow, green, black and white, in addition to the red and aluminum bronze (silver).

Below the pavement line the Mueller-Columbian Improved Fire Hydrants are coated with pitch tar varnish composition, especially mixed to resist corrosive and galvanic action from the moist soil.

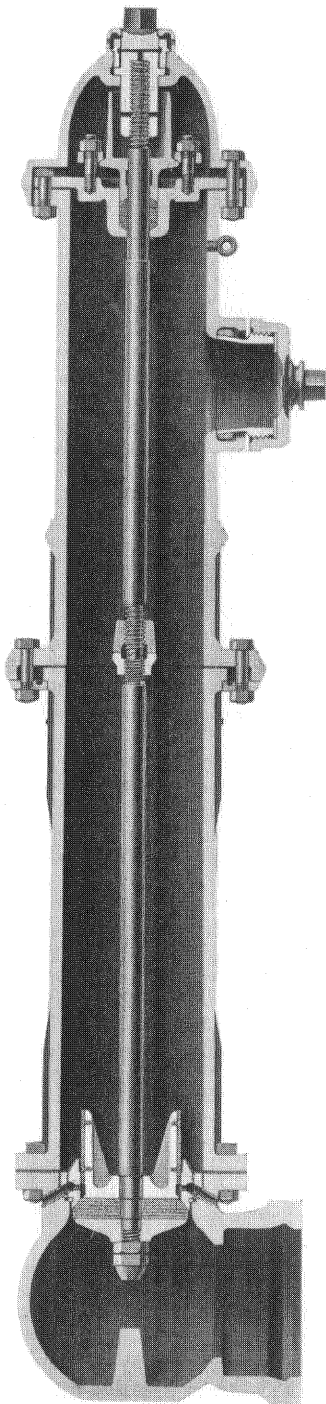
For those who attach importance to the appearance of their City streets, the Mueller-Columbian Improved Fire Hydrant adds distinction.



Chattanooga Plant



SECTIONAL VIEW OF HYDRANT (CLOSED POSITION)



The sectional half-tones on these two pages show the MUELLER-COLUMBIAN Improved Fire Hydrant in the closed position and in the open position.

Note particularly the absence of any obstructions to impede the flow of water.

The extra large diameter of the MUELLER-COLUMBIAN Improved Fire Hydrant barrel is clearly shown.

Your particular attention is also directed to the long radius sweep from the hydrant barrel to the hose and steamer openings which minimizes frictional losses at these points.

All of the above points eliminate the weak, restricted stream sometimes encountered by your fire-fighting organizations.

The bronze hose nozzles and bronze steamer nozzles are breech-locked into the hydrant barrel by means of interlocking lugs cast on the bronze nozzles, turned one-eighth of a complete turn, and then permanently sealed in place with lead caulking. This gives double protection and they cannot be blown out.

The MUELLER-COLUMBIAN Improved Fire Hydrant bottom barrel is tapered slightly, the larger diameter being at the bottom, thus obviating any possibility that frost might tend to heave the Hydrant out of the ground. This eliminates the superfluous and troublesome so-called "frost jacket."

These illustrations also show the MUELLER-COLUMBIAN completely bronze mounted construction.

The MUELLER-COLUMBIAN Improved Fire Hydrant is essentially of the compression type—opening against the



SECTIONAL VIEW OF HYDRANT (OPEN POSITION)

pressure (and closing with the pressure) of the water in the mains.

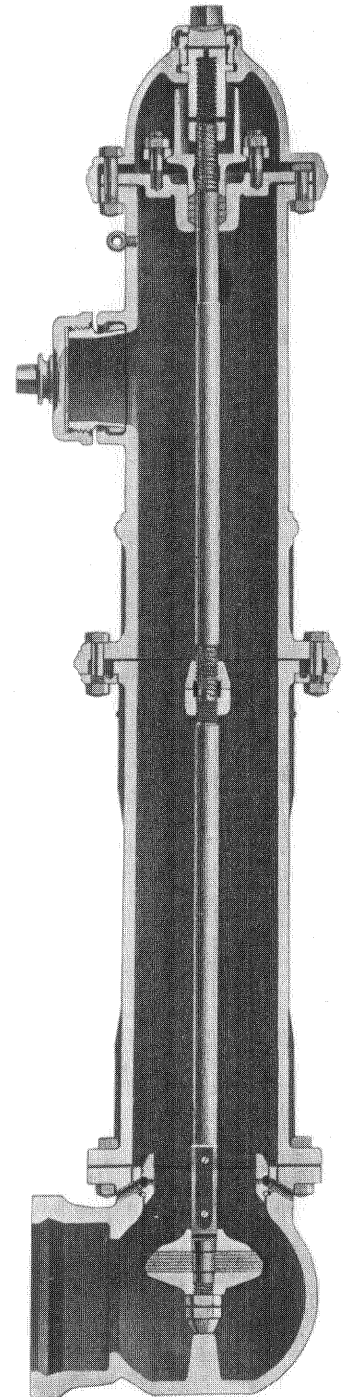
Among the many other advantages of the compression type hydrant, one of the most important is that water need not be shut off to make simple repairs. **Only** in the event some part of the main valve itself is in need of repair does the water have to be shut off from the MUELLER-COLUMBIAN Hydrant.

Should the top of the hydrant be broken in traffic accident, no water is freed from the MUELLER-COLUMBIAN compression type hydrant, as the main valve is held securely in place by the pressure of the water against it, holding it securely against its seat.

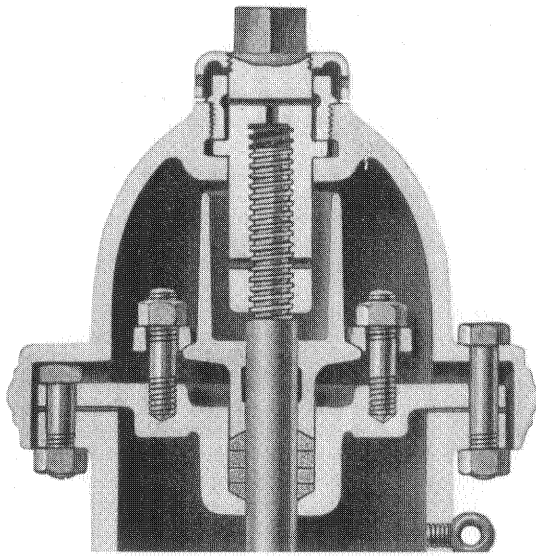
Specifically, in the MUELLER-COLUMBIAN Improved Fire Hydrant, an extension may be added, nozzles may be faced another direction, Safety Flange and coupling may be replaced, stuffing box may be repacked and oil reservoir filled,—all with no water cut off.

This compression type of construction is recognized as the most efficient in operation and over three-fourths of the Hydrants of all types installed (and being installed) in the United States are of this type. Complete and detailed information covering the main valve section of the MUELLER-COLUMBIAN Improved Fire Hydrant will be found on page 12.

MUELLER-COLUMBIAN Improved Fire Hydrants are made in strict accordance with the specifications of the American Water Works Association in every detail.



DETAILS OF CONSTRUCTION OF TOP (BONNET) SECTION



A study of the sectional illustration above shows how the MUELLER-COLUMBIAN Improved Fire Hydrant has been carefully designed to guard against the sources of corrosion, wear and breakage.

Note that the operating unit is totally sealed away from the hydrant barrel, all working parts being continuously and automatically lubricated from the large oil reservoir.

The MUELLER-COLUMBIAN Self-Oiling Reservoir performs five important functions as follows:

- (1) Insures easier turning of the operating nut, since the threads and collar are lubricated.
- (2) Prevents corrosion of parts, since they are constantly immersed in oil.
- (3) Eliminates excessive wear of parts because oil film prevents friction and wear.
- (4) Parts being in constant oil bath, no ice forms (from atmospheric condensation) between moving parts making hydrant inoperative.
- (5) Oil reservoir and packing gland being of one piece, oil seeps from reservoir on top of hydraulic packing, keeping it moist and preventing its drying out, which would cause water leakage.

The above feature alone will save your community large amounts of money through the years.

The action of the MUELLER-COLUMBIAN Self-Oiling Reservoir is positive and automatic, all bearing surfaces being actually lubricated under forced pressure.

When the operating nut is turned to open the hydrant, the threaded portion of the steel stem recedes from the operating nut until the top of the stem finally reaches the point just below the horizontal oil holes drilled through the operating nut. When this point is reached, oil from the reservoir flows through the lateral oil holes into the hollow portion of the operating nut to the same level existing in the oil reservoir.

When the operating nut is turned to close the hydrant, the top of the stem passes the lateral oil holes, trapping the oil within the operating nut. As the closing of the hydrant is continued, the oil is carried upward, the area being constantly restricted until finally it is literally forced through the oil passages drilled in the top of the operating nut, passing between the bearing surfaces of the operating nut and hold-down nut.

Any surplus flows by gravity back into the oil reservoir, thus completing the cycle.

MUELLER-COLUMBIAN Hydrant Lubricant is furnished with each hydrant. One filling will last for many years and the oil is non-freezing to minus sixty degrees (-60° F.).

(Illustration on opposite page shows method of filling MUELLER-COLUMBIAN Self-Oiling Reservoir.)

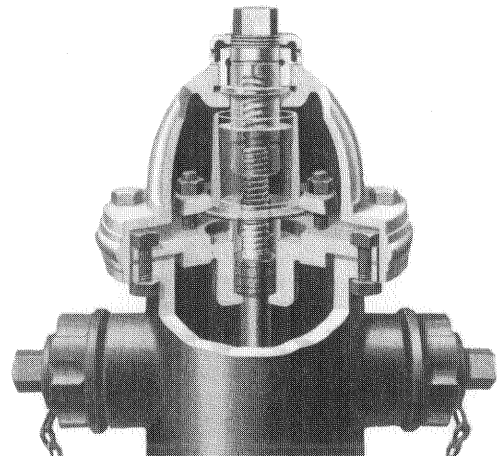
Another important feature of the MUELLER-COLUMBIAN Hood Section is the ball joint construction between the packing gland and the malleable iron gland follower. This construction permits one of the packing gland adjustment nuts to be pulled down considerably further than the other with no stem binding, and is a distinct departure from the usual flat-faced joint. (MUELLER-COLUMBIAN packing adjustment procedure is shown on opposite page).

The MUELLER-COLUMBIAN Bronze Weather Cap not only prevents freezing of the operating nut, but also guards against unauthorized removal of the bronze hold-down nut, which latter would make the hydrant inoperative.

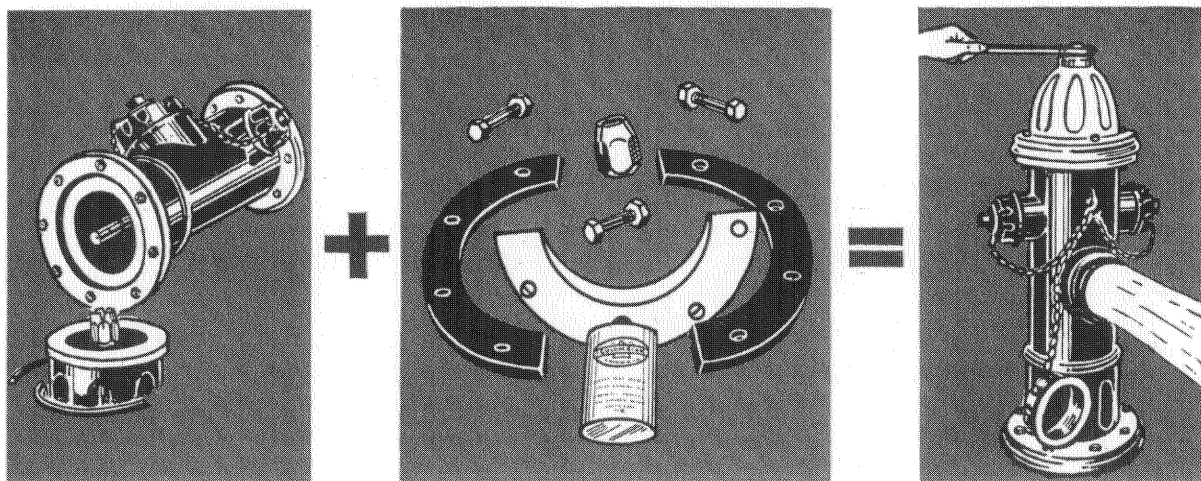
The entire MUELLER-COLUMBIAN Bonnet is of dry top construction, no water gaining access to it when packing is properly adjusted.

Should packing not be properly adjusted, any seepage into the bonnet would instantly flow out through the space provided between the stuffing box plate and the bonnet.

Other features include cadmium-plated stuffing box bolts, bronze adjustment nuts, long-fibered, water proof hydraulic flax packing and cold-rolled steel stem section threaded with minute accuracy to gauge.



MUELLER-COLUMBIAN SAFETY FLANGE ACTION IN TRAFFIC ACCIDENT



The use of the MUELLER-COLUMBIAN Safety Flange and Safety Coupling achieves the following important points:

1—Complete cost of replacement is but a fraction of the usual cost. The necessary parts are furnished in a neatly packed kit as shown on this page.

2—The usual repair time of several hours is cut to but a few minutes, thus keeping the hydrant out of service only a short time.

3—It is not necessary to cut the water off the line to make complete repair. The importance of this is greater where hydrants do not have individual cutoff valves, necessitating the placing of several hydrants out of commission to repair one.

4—No digging is required,—the entire repair being made above the ground line.

5—The complete repair may be made by one man.

6—No flooding of streets or property damage is possible, as the pressure of the water against the main valve holds it tightly in place.

7—Gradual absorption of shock helps to prevent injuries to occupants of automobile or truck.

On page 9, we present a number of pictures showing but a few of the many gruelling breakage tests to which the MUELLER-COLUMBIAN Improved Fire Hydrants have been subjected.

PAGE 8

Every section of the country has had its MUELLER-COLUMBIAN hydrant breaking demonstration, and the results have convinced even the most skeptical.

Replacement of the MUELLER-COLUMBIAN Safety Flange is made at a small fraction of the usual cost of repairing the hydrant after it has been broken by impact.

Not only does the cost of such breakage amount to a considerable sum in money to the average city without hydrants so equipped, but there is a considerable time factor lost, sometimes involving the cutting off of water in a large area, causing great inconvenience to factories and residences in the area and seriously impairing fire protection service.

With the use of the MUELLER-COLUMBIAN Improved Fire Hydrant, there is no water loss, no water cut-off, no barrel breakage, no digging, and the entire replacement of Safety Flange may be achieved in a very few minutes above the ground line.

The MUELLER-COLUMBIAN Safety Flange represents but one of the many features which will enable you to cut your fire hydrant maintenance cost to a minimum, and we earnestly bespeak your careful consideration of each of these features from the standpoint of economy, safety, efficiency of operation, and the chief function of a fire hydrant—fire protection.



MUELLER-COLUMBIAN SELF-OILING RESERVOIR

(Procedure for filling)



1. Remove Four Bonnet Bolts.



2. Turn Operating Nut in opening direction until free of Stem.



3. Remove Bonnet



4. Replenish MUELLER-COLUMBIAN Hydrant Lubricant if necessary to within three-quarters of an inch from top of oil reservoir.



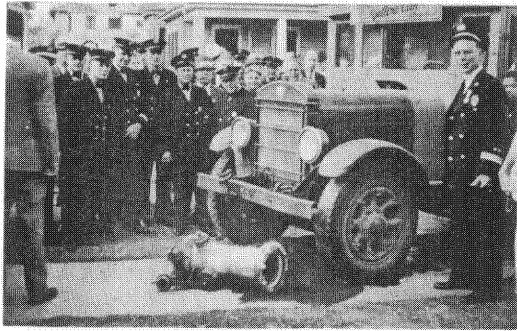
5. Replace Bonnet. Turn Operating nut to engage stem. Bolt in place.

MUELLER-COLUMBIAN PACKING ADJUSTMENT

(Follow Directions for Oiling and Tighten Two Stuffing Box Nuts)



ACTUAL BREAKAGE TESTS OF MUELLER - COLUMBIAN
IMPROVED FIRE HYDRANTS BEFORE OFFICIALS



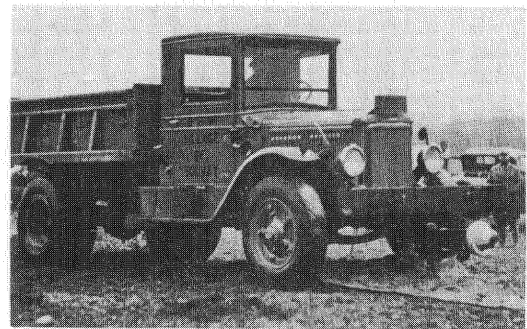
Los Angeles, California



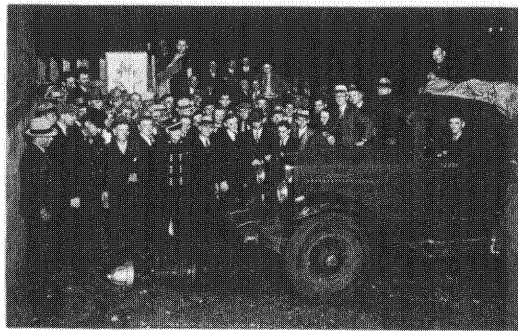
Jamaica, Long Island



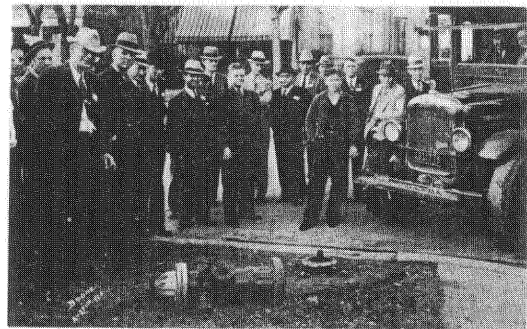
Memphis, Tennessee



Solvay, New York



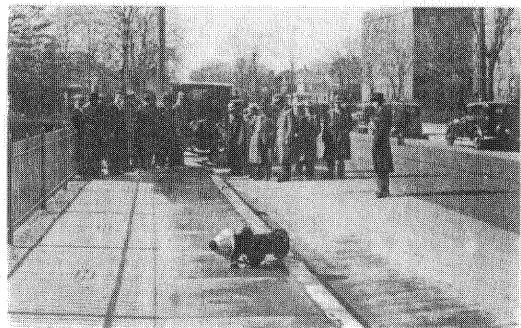
Decatur, Illinois



Austin, Texas



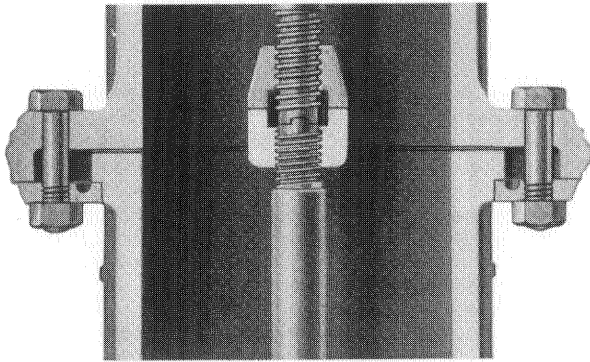
Augusta, Georgia



Nassau, Long Island



DETAILS OF CONSTRUCTION OF MIDDLE (SAFETY FLANGE) SECTION



One of the most important features in the construction of the MUELLER-COLUMBIAN Improved Fire Hydrant is the MUELLER-COLUMBIAN Safety Flange and Stem Coupling.

Traffic accidents will occur, especially on wet or slippery pavements, and this low maintenance feature of the MUELLER-COLUMBIAN Improved Fire Hydrant is of the utmost importance in keeping your yearly repair expense at a minimum.

The accompanying half-tone shows clearly the design of the safety flange and safety coupling.

Note particularly that the safety flange is not a part of the top barrel section nor the bottom barrel section. It is composed of two separate castings with an ingenious groove encircling it.

This groove permits breakage of the fire hydrant in the event of a transverse impact from a truck or other vehicle.

When a side blow of sufficient force is applied to the MUELLER-COLUMBIAN Improved Fire Hydrant, the two sections of the safety flange receive the impact and break through the groove, the top portion of the hydrant barrel toppling to the ground and the safety flange itself falls harmlessly by gravity to the earth. The bottom section of the hydrant barrel remains intact and in its original position in the ground.

Neither the top barrel section nor the bottom barrel section are damaged to the slightest degree and both may be used again and again.

Both the top and bottom barrel are reinforced with ribs and extra thickness of section for several inches on each side of the safety flange. This emphasizes the action of the safety flange at the pivotal point at the ground line.

The safety flange is made in two half circles to simplify replacement.

The MUELLER-COLUMBIAN Safety Coupling is of rolled bronze, threaded at the top to correspond with the threads on the top section of the hydrant stem and threaded at the bottom with threads to correspond with the bottom stem.

The pitch of the threads are different, thus achieving a differential jamb nut effect and securely holding the two sections of the stem in absolute contact and alignment.

The two sections of the stem have a key and key way and the assembly of the two sections of the stem with the safety coupling is accomplished in the following manner.

With the bottom barrel section and the lower stem in place, the safety coupling is screwed down on the lower stem as far as the threads permit. The top section of the stem is next screwed into the safety coupling until it contacts with the lower stem and the key and key way are in alignment. (This can be detected through the slots of the safety coupling.)

The safety coupling is then screwed upward until the tongue and groove of the stems firmly lock together and the safety coupling is next tightened with a wrench.

In turning the safety coupling upward, the number of threads per inch at the top being less than the number of threads per inch at the bottom, the safety coupling travels faster at the top than at the bottom, thus bringing the two sections of the stem into contact by means of the tongue and groove.

It should be noted that in operating the MUELLER-COLUMBIAN Improved Fire Hydrant the motion of the stem is not in a rotary direction but is vertical, with no turning.

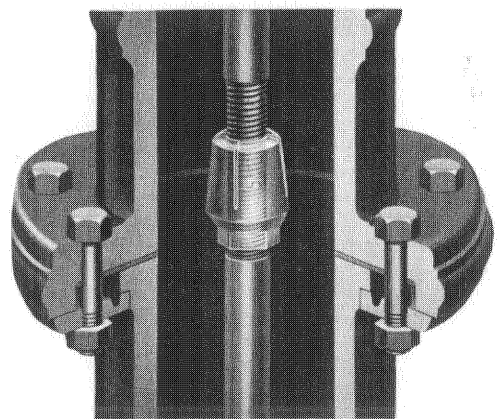
The safety coupling is slotted so that it does not make any difference whatever as to the direction of the impact, the spreading of the safety coupling being accomplished regardless of the directional force applied.

(Full and complete description of the MUELLER-COLUMBIAN Safety Flange and Safety Coupling replacement may be found on the opposite page.)

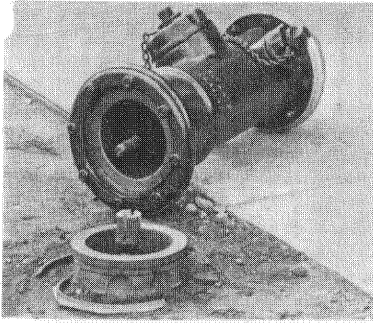
In addition to the important function of the MUELLER-COLUMBIAN Safety Flange arrangement as explained above, additional advantages of this construction are as follows:

1—Rotation of nozzles to any desired direction may be accomplished by simply loosening the bolts of the safety flange and rotating the top section of the hydrant. The bolts are then tightened. Full description of this feature may be found on page 16.

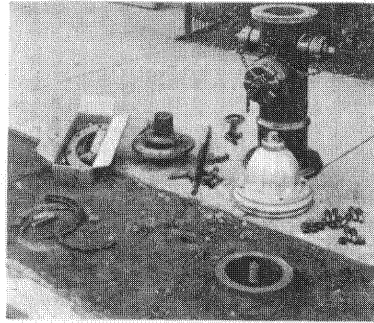
2—The lengthening of the fire hydrant to accommodate changed grade levels is effected by means of the removal of the top barrel section and stem section and the use of the MUELLER-COLUMBIAN Extension Section and Extension Stem between the bottom barrel and top barrel. (Full description of this operation may be found on pages 18 and 19.)



MUELLER-COLUMBIAN SAFETY FLANGE REPLACEMENT



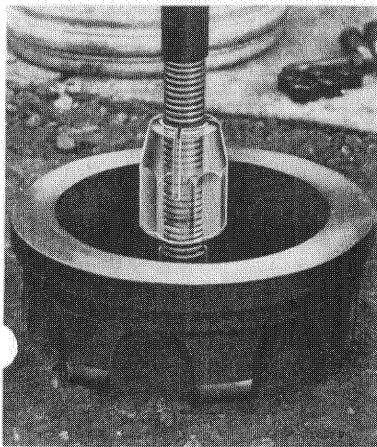
1. "MUELLER-COLUMBIAN" Improved Hydrant with upper barrel knocked over by truck. Note broken pieces of Safety Flange lying on ground.



2. Remove stem, bonnet assembly and stuffing box assembly from upper barrel.



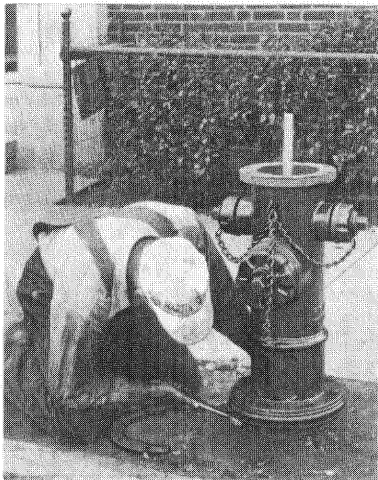
3. Screw new Safety Coupling down on to lower stem as far as threads permit. Screw upper stem into Safety Coupling until it contacts with lower stem.



4. Turn Safety Coupling and upper stem so that a slot in Safety Coupling aligns with tongue and groove of stems. Hold upper stem in alignment and screw Safety Coupling upward until tongue and groove of stems firmly lock together, tightening with wrench.



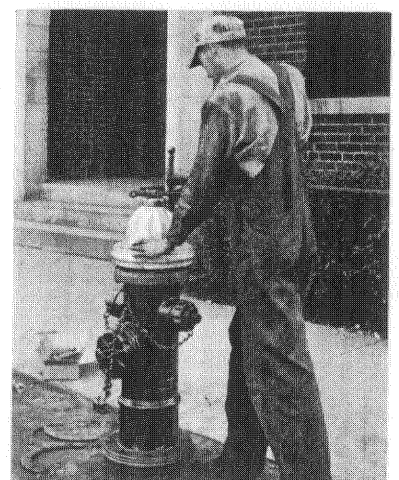
5. Holding gasket in position on flange, place upper barrel in position concentric with lower barrel.



6. Bolt into place two halves of Safety Flange with circular groove facing upward, and with Safety Flange snugly fitting around lower barrel.



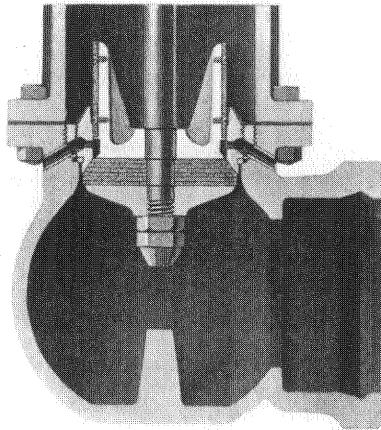
7. Bolt stuffing box assembly to upper barrel and tighten down stuffing box. Pour MUELLER-COLUMBIAN Hydrant Lubricant into oil reservoir until three-quarters of an inch from top.



8. Place bonnet in position and turn operating nut until bonnet is firmly seated against stuffing box plate. Bolt in place. If leakage occurs, remove bonnet and retighten stuffing box.



DETAILS OF CONSTRUCTION OF BOTTOM (MAIN VALVE) SECTION



Your experience with fire hydrants has undoubtedly shown that the initial cost has little bearing on its ultimate cost. Corrosion, wear and freezing must always be dealt with, time playing no favorites. The hydrant that guards against these forces of nature to the best advantage is the most economical you can install, regardless of its first cost.

The main valve section of the MUELLER-COLUMBIAN Hydrant has also been engineered to overcome these depreciating factors.

For instance, the bronze seat ring of the MUELLER-COLUMBIAN Improved Fire Hydrant is screwed into a bronze bushing, the latter being threaded into the shoe and permanently pinned in place. No longer will it be necessary for your maintenance men to spend hours trying to break loose an obstinate seat ring from the rusted cast iron threads of the shoe.

The MUELLER-COLUMBIAN Improved Hydrant, being of the compression type, retains all the basic advantages of this general type over other types. These include the holding of the leather seat securely in place by means of the force of the water pressure in the mains, regardless of what may happen to the top of the fire hydrant such as traffic breakage, etc.

The threaded base of the stem is protected completely by a bronze, crown type jamb nut, preventing rusting of the threads and eliminating the chance that the main valve may drop down into the shoe.

The MUELLER-COLUMBIAN Leather Valve is chrome-mineral tanned,—guaranteed to have at least double the life and abrasive strength of ordinary oak-tanned valves. Its full-faced taper averts the contingency of pulling the leather valve thru the seat ring opening. It is water-proof, acid-proof and heat-proof (to 360° F.), and offers the greatest possible resistance to cuts by rock or other debris.

The shoe has an integrally cast stop in its base, permitting opening to the point of maximum flow.

The bottom valve plate is of heavy durable construction, holding the leather valve securely in place thruout its diameter.

The upper valve plate is of solid bronze, its two guide wings furnishing the basic principle of the MUELLER-COLUMBIAN positively operated double drain. These guide wings are each fitted with leather inserts, dovetailed into place and made doubly secure with countersunk bronze screws.

The heavy bronze seat rings have machined grooves into which the bearing surfaces of the guide wings work in a vertical plane, eliminating any possibility of vibration. The bottom of the upper valve plate beneath the leather inserts is undercut, and opposite this undercut portion, the seat ring has large drain holes drilled laterally thru it.

An annular groove is cut around the outer periphery of the seat ring, and leading from this groove are two extra large, bronze-bushed drain holes emptying into the crushed rock surrounding the setting of the hydrant shoe.

The MUELLER-COLUMBIAN drain mechanism is simple, time-proven, and positive in operation. Note particularly the absence of springs, plungers, toggle joints, and synchronized mechanisms of any kind. The operating details are as follows:—

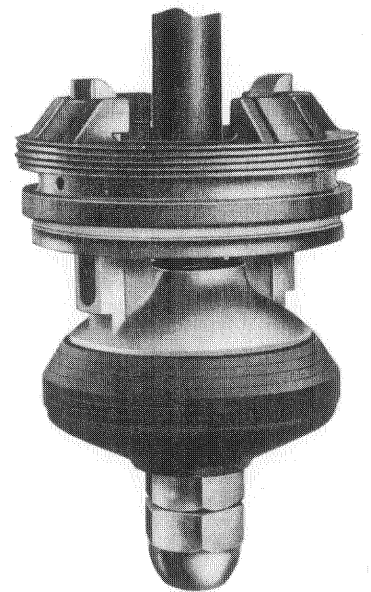
With the hydrant in the closed position, water in the hydrant barrel is free to flow by gravity into the undercut portion of the upper valve plate, thence thru the lateral holes in the seat ring into the annular groove, and from that point flows outside the hydrant thru the bronze-bushed drains of the shoe.

When the hydrant is opened, the leather insert pieces of the upper valve plate continuously shut off the water from the holes in the seat ring, thus insuring full pressure at the nozzles and no loss thru the drains in the open position. Undercutting beneath the guide wings is carefully calculated so that the complete drain system is under full pressure of the mains for an instant while the hydrant is being opened, flushing out any small rocks, sand, etc. from the drain orifices.

Another ingenious feature is the MUELLER-COLUMBIAN Copper-Asbestos Gasket which fits into the groove cut at the lower outside circumference of the seat ring. As the seat ring is screwed into position, this gasket is compressed between it and the shoulder of the shoe, forming a permanent water-tight joint between shoe and seat ring. This copper gasket always comes out with the main valve when removed, as it is compressed into the groove of the seat ring at the time of assembly.

The complete main valve assembly may be easily removed thru the top of the hydrant barrel by means of the special seat wrench, the ease of removal being enhanced by the use of the bronze bushing in the shoe and the straight, non-tapered threads of the seat ring.

(Full and complete description of the MUELLER-COLUMBIAN Main Valve Removal is shown on the opposite page.)



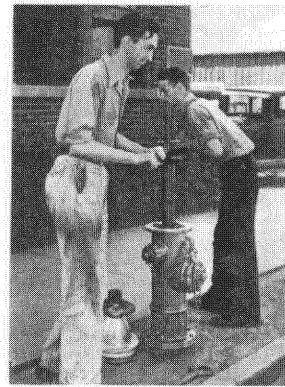
MUELLER-COLUMBIAN MAIN VALVE REMOVAL



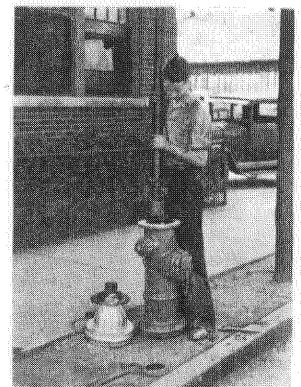
1. Remove four bonnet bolts and turn Opening Nut in opening direction until free of Stem Thread. Remove Bonnet.



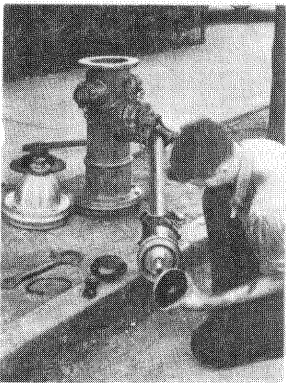
2. Unbolt and remove Stuffing Box as a unit by removing four stuffing box bolts.



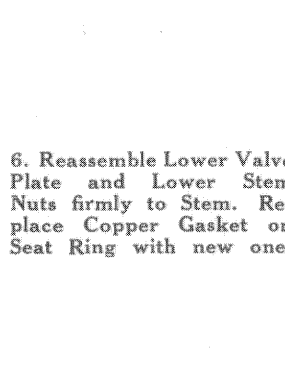
3. Insert Seat Wrench and Screw Wrench Nut on to Hydrant Stem until Slip Rod engages top of Seat Wrench. (If non-adjustable type, use operating nut instead of Seat Wrench Nut.) Cut off water at valve. Turn Seat Wrench to left to unscrew Seat Ring.



4. Lift complete working parts and Seat Wrench Assembly from Hydrant Barrel.



5. Remove lower Stem Nuts and Lower Valve Plate. Replace damaged or worn parts.



6. Reassemble Lower Valve Plate and Lower Stem Nuts firmly to Stem. Replace Copper Gasket on Seat Ring with new one.



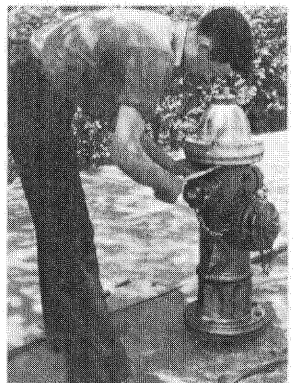
7. Replace complete working parts and Seat Wrench Assembly in Hydrant Barrel.



8. Screw Seat Ring in place by turning Seat Wrench to the right. Turn Water on at valve. Remove Seat Wrench.



9. Bolt Stuffing Box unit in place and tighten. Refill Oil Reservoir with MUELLER-COLUMBIAN Hydrant Lubricant to within three-quarters inch from top.



10. Reassemble Bonnet to Hydrant in reverse manner as it was removed and bolt in place.

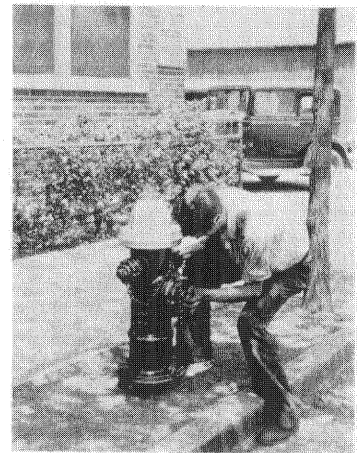
MUELLER-COLUMBIAN FACING OF NOZZLES



1. Loosen Nuts on Safety Flange Bolts.



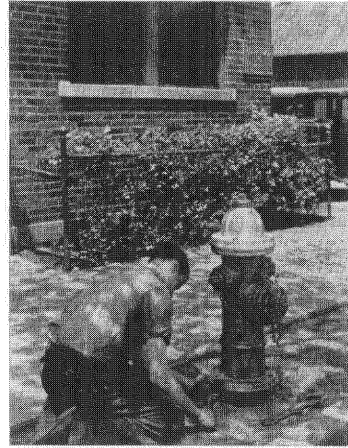
2. Turn Operating Nut slightly in opening direction to relieve friction between Barrel Sections.



3. Rotate Upper Barrel Section as desired.



4. Tighten Operating Nut to closed position.



5. Tighten Safety Flange Bolts.

The MUELLER-COLUMBIAN Swivel Joint construction at the ground line permits the facing of nozzles in any direction either before or after installation by simply loosening the safety flange bolts and revolving the top barrel section of the hydrant to the desired position. This operation is also accomplished without digging or cutting off the water in the mains.

This is but another feature of the unique MUELLER-COLUMBIAN design and its almost universal adaptability to meet conditions after installation and resulting in lower maintenance costs.

(The details of this simple procedure are shown above.)



MUELLER-COLUMBIAN ADDITION OF STEAMER NOZZLE

Many of the smaller cities do not find it necessary nor expedient to install fire hydrants with a pumper (or steamer) connection at the time of original installation.

Such communities may install MUELLER-COLUMBIAN Improved Fire Hydrants with perfect assurance that they may later change to hydrants with steamer connection at practically no additional cost.

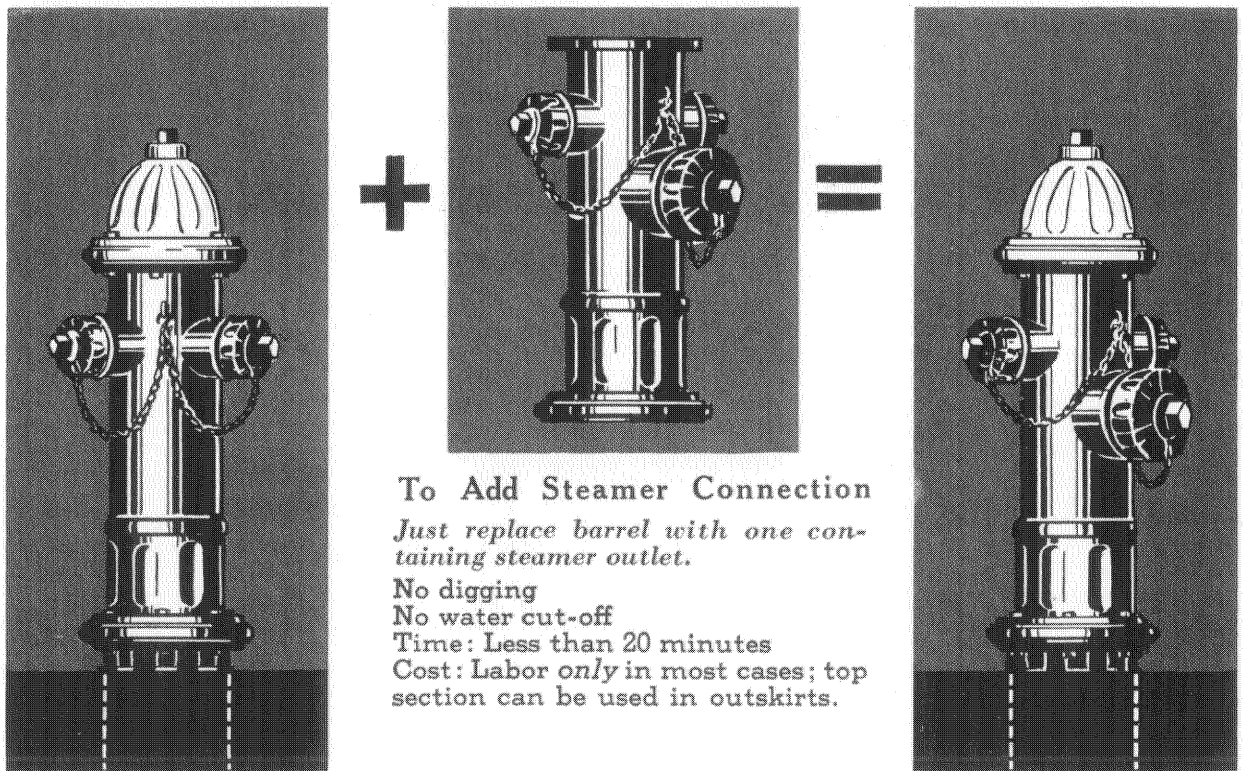
In these smaller communities, if an initial installation is of the two nozzle type and it is desired to have hydrants equipped with a steamer connection in addition to the two nozzles, this can be accomplished by merely ordering a new top section with the steamer connection, unbolting the original upper barrel at the ground line, and substituting the new one.

As an alternate, a complete new hydrant may be ordered with a steamer connection, the upper barrel of which (with the steamer connection) may be used on the old installation. The upper barrel section of the original hydrant may be used with the bottom barrel section of the new hydrant in outlying or suburban districts where a steamer connection is not required.

Used in this manner, the cost of having fire hydrants with steamer connections in the growing business sections is negligible.

Again no digging is necessary, the change takes but a few minutes and there is no water cut off.

(The graphic illustration below describes the simple procedure).



DETAILS OF CONSTRUCTION OF EXTENSION SECTION

After hydrants are installed, many cities find it necessary to raise the grade levels of their streets, thereby making the hydrant too short.

This results in either the nozzles being submerged below the ground level or so near the ground that it is impossible to swing a wrench in removing the nozzle caps.

The construction of the MUELLER-COLUMBIAN Safety Flange permits this difficulty to be overcome quickly and inexpensively.

The extension section of the barrel and the extension section of the stem with its coupling are simply inserted between the top barrel section and the bottom barrel section as shown on the opposite page. These extension sections are made in multiples of six inches—from 6" long upward.

The extension section is provided with a solid, non-breaking flange which is substituted for the grooved safety flange and is used between the barrel section remaining in the ground and the bottom of the extension section. A solid stem coupling is also provided at this point and substituted for the slotted safety stem coupling.

The safety flange and safety stem coupling removed from the hydrant originally are again attached at the new grade or pavement line and the hydrant is again in service.

It should be carefully noted that the change requires no digging, takes but a few minutes to install. The cost is but a fraction of the usual cost involved in such a change and it is not even necessary to cut the water off the line.

(Step by step procedure in making the change is shown on the following page).

