

## IDEAL BULLET MOULDS: THE BARLOW AND MARLIN YEARS, 1884 - 1915

I: 1884 - 1896

The Ideal Manufacturing Company was established in New Haven, Connecticut in 1884 by John H. Barlow. Barlow, a Civil War veteran, had worked for Winchester in the same city, reportedly in their loading tool manufacturing department; his earliest patents, No. 229,301 (1880) and No. 267,130 (1882) apply to Winchester tools of that period. With his 1884 patents Nos. 294,955 and 309,681 in hand, he decided to strike out on his own, marketing a basic tong or "nutcracker" tool (**Figure 1**) with integral mould, which performed all the operations needed to reload close duplicates of the original cartridge for reuse - without resizing - in the same firearm.



**Figure 1**  
**Early Non-Adjustable Ideal No. 1 Tong Tool with Integral Mould**  
(Courtesy Tom Quigley)

Since each manufacturer had a preferred bullet shape and crimp placement relative to the nose of the bullet, the seating/crimping chambers were cut to specifically fit this preferred profile, and the moulds were carried accordingly, for Winchester, Marlin, Colt, S&W, etc. firearms. As a result, Barlow rapidly acquired a substantial collection of mould cherries and seat / crimp chamber reamers.

While the tong tools with integral moulds served the user satisfied with the standard bullets and seating positions, there was also demand from experimenters such as Dr. Hudson, Francis J. Rabbeth, Reuben Harwood, etc., for more flexibility, which led to the introduction in 1893 of the No. 3 "Special" tool, "...the rifle crank's very own." (**Figure 2**), using separate moulds, and equipped with adjustable seating / crimping dies to accommodate various bullet profiles, seating depths, and even - within limits - case lengths. (This tool, melded with the later No. 10, adapted to rimless cases, survives over 100 years later as the familiar Lyman "310" tool with which so many of us began our reloading careers.) But here, we shall focus on the moulds themselves.



**Figure 2: Ideal No. 3 Tong Tool with Double-Adjustable Seat/Crimp Die and Separate Ideal Mould**

The very first moulds showed the familiar Ideal profile, with blocks integral with the wood-covered handle shanks, a large-diameter hinge rivet, and with the sprue-plate knock-off tab facing to the right (as opposed to the Winchesters' less-convenient straight-ahead position); but with some variation in handle lengths, attachment of the wooden grips, end-caps (which disappeared in the early 1890's) and ferrules (added a few years later). (**Figure 3**) shows a group of these, courtesy of Tom Quigley, Secretary of the Antique Reloading Tool Collectors Association and co-author of "Cartridge Reloading Tools of the Past".



**Figure 3: Early Ideal Moulds; Various Handle Patterns**

These early moulds did not have the setscrew in the LH block for retaining the adjustment of the sprue-plate pivot screw, nor do they appear to have been fitted with an alignment pin to ensure proper registry of the two halves when closed. They were marked on the sprue-plates with the company name and either the common cartridge identifier or a combination of caliber and weight in grains, as in seen **Figures 4 and 5**. The mould in (**Figure 5**), though clearly of early Ideal make, is of interest in that it shows Marlin's post-1881 logo, "M. F. A. Co." in lieu of Ideal's name, and, perhaps, foreshadows the later connection with that firm as Ideal's successor.



**Figure 4: Early Ideal Mould with Ideal Address; Cartridge Designation Stamp**



**Figure 5: Early Ideal Mould, Marked for Marlin Fire Arms Co.; Caliber + Weight Stamp**

The first edition of the familiar Ideal "Handbook of Useful Information for Shooters and Reloaders" appeared in 1891 (it was reprinted in John Amber's "Ten Rare Gun Catalogs", 1954). It is in two sections, the first 25 pages providing "Instruction on How to Prepare Your own Ammunition", and the balance of the 57 pages being a "Catalogue of the Ideal Tools", plus a few ads, Marlin taking the favored inside back cover; some information is duplicated in both sections. A table is provided on pp. 18 - 21, listing (but not illustrating) the bullets available and providing nominal caliber; powder (black) charge for standard cartridges; bullet weight; firearm maker or bullet designer; pure lead or recommended tin / lead mix; and "correct" (i.e., as-sized) diameter. Heel-crimp bullets for the .32, .38, .41 and .44 Colt revolvers are listed separately on p. 21. A few bullet designs are illustrated in the catalog section, with specific versions of the tong tools adapted to their cartridges. The Ideal single-cavity mould, with the medium-length, end-capped handles is shown on p. 40 (**Figure 6**), along with mould prices: \$1.10 for a standard grooved or smooth-sided (i. e., paper patched) mould, \$1.50 for round ball; \$1.70 for "express" or hollow point; and \$1.70 "for Colt's .38 long [with] inside lubrication" (i.e., hollow based). Round balls from .32 to .45 caliber are pictured at the foot of the page.



**Figure 6: Early Ideal Mould with End-Capped Handles, no Ferrules**  
 Courtesy Marc Davison

Page 41 shows the familiar egg-shaped Ideal dipper, based on Patent No. 431,315 (1890), at 50 cents (it is also seen, in use with the Ideal iron melting pot and stove-lid insert and Ideal mould on p. 13). P. 46 illustrates (**Figure 7**) an adjustable-length mould, based upon Barlow's 1891 Patent No. 446,178, (later known as the "Perfection" mould) at \$2.50 - \$3.00, depending upon caliber.



**Figure 7: Early Adjustable-Length (pre-"Perfection") Mould**  
 Courtesy Bob Fowler

While the tong tools provided a rather crude bullet sizing capability with a plunger operating through the third opening from the hinge, a dedicated sizing tool with swiveling plunger and swiveling, replaceable sizing die, from Barlow's Patent #464,311 (1891), was also offered for the experimenter (**Figure 8**) on page 47.



**Figure 8: Ideal Interchangeable-Die Bullet Sizer**

A fancy "Special" mould with polished coco bolo handles is listed on page 48 at \$1.75 in "regular sizes", and \$2.50 for "Express" (and, presumably, hollow-based) moulds (**Figure 9** shows a cut of the "Special" version,



**Figure 9: Ideal "Special Finish" Bullet Mould**

together with hollow-point plug). Bullet illustrations are shown for a variety of special designs (by Barlow and by individual customers) in a display of "Special Ideal Bullets" on p. 49 (some available in multiple lengths / weights) at special-order prices ranging from \$1.50 to \$2.50 (the latter for a pair of .32 and .45 caliber paper-patch bullets with exceptionally deep hollow points). At this time, the smooth-sided paper-patch bullets seem to have been offered in the regular two-piece moulds.

[NOTE: The Handbooks / Catalogs issued by Ideal and, later, Marlin do not bear dates; these must be inferred from those appearing in the various letters, testimonials, magazine article extracts and ads included therein. The dates cited here are those provided by Phil Wahl, President of the ARTCA, from study of his extensive reference files, and printed in Chamberlain & Quigley, "Cartridge Reloading Tools of the Past", page 99. Considering the lead-time for editing, printing and distribution, they are assumed accurate to within one year of the quoted dates.]

The Ideal Handbooks continued to be issued at approximately yearly intervals; the Second Edition (late 1891) being essentially the same as the first, although the standard mould now appears with shorter, cap-less handles (**Figure 10**), on page 40.

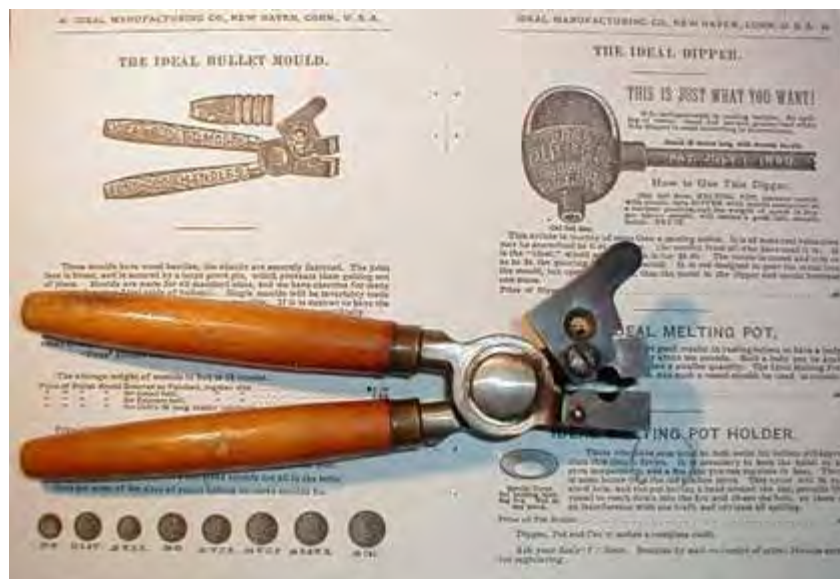


Figure 10: Standard Ideal Mould, pre-1902

The "Special" mould - now with similar handles - is shown on page 48, along with the "Gould" .45 caliber, 330-gr. express bullet designed by Barlow and named in honor of the Editor of the contemporary NRA weekly publication "Shooting and Fishing", as well as a new .50-515 bullet for the N. Y. State militia. And, added to the cut of the Ideal bullet sizer (turned sideways, and obviously added in final proofing), are cuts showing a new .32-115 S&W Revolving Rifle bullet and the N. Y. Zettler Rifle Club's favorite .38-55-255. Opposite these appears the notice: "Moulds to cast 2, 3 or 4 bullets made on order", at \$2.20, \$3.00 and \$4.00, respectively. Similarly, a cut of a Rabbeth paper-patched .38-55-330 bullet is added to the figure showing the adjustable mould, at \$1.50 in fixed, and \$3.00 in adjustable length versions. Handbook No. 3, from 1892, adds sections on paper patching (pp. 16-19) and on the thick-walled "Everlasting" shells (pp/ 20-21). Correspondingly, the catalog section now offers at \$3.00 (Figure 11) the new one-piece, adjustable base-pour mould for the smooth-sided, paper-patched bullets, derived from Patent No. 489,580, awarded in 1893 (whereas earlier tools and moulds show considerable redesign from the patent drawings, this patent was clearly drawn up from a final design already in production).



Figure 11: Ideal Cylindrical / Adjustable One-Piece Mould

Round ball moulds for use in 10 and 12 gauge shotguns are offered at \$2.50 (page 55). Handbook No. 4 (1893) adds

further discussion of special-purpose bullets, and illustrates (**Figure 12**, page 27) a variety of "express" designs for rapid expansion: the Gould .45-330; a .50 cal designed to have a .22 blank inserted into its nose; and the use of a slip of paper between the mould blocks to provide a "split" point for immediate expansion on impact.



**Figure 12: Various Expanding "Express" Bullet Designs**

The price of Express and hollow-base moulds was increased from \$1.70 to \$2.00; blank moulds, "...ready to cut." are now available at the base price of \$1.10 (page 41). The two-piece adjustable mould for grease-groove bullets is now carries the label "Perfection", and is available in calibers .25 through .45 at \$3.00. Although the 2, 3 and 4-cavity moulds are still listed on page 54, page 62 now offers a massive "Ideal Armory Mould" cut for "six of the largest military and sporting bullets" at \$10.00 (**Figure 13**).



**Figure 13. Early Ideal "Armory" Six-Cavity Mould**

This issue was reprinted (with a few deletions) as an appendix to Lyman Ideal Handbook No. 39 (1953).

Handbook No. 5 (1894) (reprinted in 1992 by Armory Publications, and in 2004 by Abby Books at <[www.cornellpubs.com](http://www.cornellpubs.com)>) still maintains the separate "Instructions" and "Catalog" sections, although they are beginning to overlap; the range of adjustable-length "Perfection" bullet designs is illustrated and their use discussed on pages 19-21, with a total of 25 caliber / profile / weight combinations; it is noted that these nose-pour moulds will not be made in hollow-based form (earlier cuts had shown a shallow hollow-base former incorporated into the adjustable follower, and indeed, this still is to be seen in the figure on page 61), presumably due to the difficulty of extracting the cast projectiles from the mould. A bench-type shotshell loading machine is now offered, and on page 31, round ball moulds in 10, 12, 14, 16 and 20 gauge are shown and their use and fitting to the shotgun bore and choke are described; these engraved cuts are repeated on page 66, with mould prices given as \$2.00 each. An ad by Reuben Harwood at the back of the Handbook (page 74) illustrates the original ".22 Hornet", based on the .25-20 Single-Shot case, an early precursor to the .22 Lovell wildcats (but not of our modern cartridge of that name, which derives from the .22 WCF). It is fortunate that this Handbook No. 5 is currently available in reprint form, as it is perhaps the most informative of these early issues. Handbook No. 6 (1895) adds a couple of .25 caliber bullets, mentioning Marlin's intention to issue a Model 1893 rifle in ".25-40", evidently soon scaled back to the .25-36 (and illustrative of the competition between Marlin and Winchester to get high-velocity, small-bore smokeless loads onto the market). Other than some new shotshell tools, there is little more material than in the preceding issue. We presently lack a copy of Handbook No. 7 (1896), but No. 8 (issued later the same year) shows that Ideal has "gone global", with sales through established sporting goods outlets in Hawaii, Mexico, England, France, Germany, Australia and India. The massive (13 inches long, about 4 pounds) Armory mould is now announced as available in calibers other than the previous "largest military and sporting bullets", with six cavities in the .45 and .50 calibers, seven for the .38s, eight in .32, and ".22 and .25 calibers may have nine bullets, if so ordered...The price [of] \$10.00 is for the mould complete for any *one* size...of the regular or special bullets mentioned in the Hand-Book..."

## II: 1896 - 1908

With the advent of the new and rapidly growing variety of small-bore, smokeless cartridges, Barlow added a number of new bullet designs. These are introduced in an Ideal Manufacturing Company flyer issued - presumably - sometime in 1896 (see Appendix I; an earlier reproduction of this brochure appeared as a sidebar on page 149 of the 1982 46th Edition of the Lyman Reloading Handbook, in Kenneth L. Walters' excellent article, "A Historical Look at Lyman Cast Bullet Designs".) Twenty-one new bullets in .25 and .30 calibers are pictured, and their applications to the various new Winchester, Marlin, Stevens and other arms are described. The numbered figures 1 - 21 led to a new approach to cataloging the multiplicity of bullet designs on hand, which appeared in Handbook No. 9, in 1897. In this issue, Barlow introduced (page 81) "The Ideal System of Numbering Bullets": "...the first three figures of the number



is [sic!] the standard diameter (in thousandths) of the bullet..." [followed by] "...a certain number for each particular one..." The latter one-, two- or three-digit number sequence began with the corresponding twenty-one illustration numbers for the .25 and .30 caliber bullets in the 1896 flyer, and then extended (in very rough order by caliber) through the round-nose bullet #403150 (in subsequent issues, this was changed to #406150) for the .40-72-330 Winchester; we henceforth refer to this second group as the "cherry number". In Handbook No. 9, all currently available bullets are illustrated (except #446111, described as a shortened, solid, 335 gr. version of the #446110 hollow point) in order of caliber, with detailed descriptions of the cartridges, firearms, applications, suggested powder charges, and - where relevant - the specific tong tools and seating chambers to be used in loading them. It is noted that the "Perfection" moulds cannot be provided for round- or pointed-nose bullets (since they are necessarily nose-pours); the same is true for the hollow-base designs, although, as in the case of #3089 vs. the plain-base round-nose #30822, a hollow-base version of a given round-nose design can be made with a slight meplat at the sprue cutoff. Round balls were at this time regarded as primarily for gallery or short-range use in standard cartridges, and were therefore numbered in with the other bullet designs (muzzle-loader shooters were scarce on the ground at the time, and usually were adequately provided either with moulds custom-made for their arms, or with Civil War surplus moulds). Prices remained steady at \$1.10 for standard designs, \$1.50 for round balls and bullets longer (heavier) or shorter (lighter) than standard; "Express" (hollow-point) and hollow-base moulds at \$2.00 (the special, deep hollow-point PP, fixed-weight paper-patch designs by "Col. Pickett, the well-known grizzly bear killer", #31953 and #451115, sold for \$2.50); and Perfection and adjustable-length cylindrical (paper-patch) moulds at \$3.00. The illustrated charts from Handbook No. 9 are reproduced from the only presently available copy on the CASTPICS website <[www.castpics.net](http://www.castpics.net)>, for those who want more details.

We need to digress here for some speculation as to the approaches employed in manufacturing these cherries and the resulting moulds, drawing on clues provided by the individual designs, their pricing, and general mechanical experience; some of what follows is necessarily speculative and subject to correction when more information is uncovered. As noted, the standard, fixed weight moulds were the lowest in price (\$1.10), were base-poured designs in a variety of solid nose shapes, and made use of specific, dedicated cherries. Mould block / handle forgings were made in a variety of sizes, as seen in **Figure 14**, ranging from shallow, for round balls (left) to extra-deep to accommodate the "Perfection" mould adjustment mechanism.



**Figure 14. Standard Ideal Moulds, Various Block Depths**

"where round-ball mould #35866 is compared with a more massive and deeper #429215. The same cherries could be used for the hollow-pointed "Express" versions, at the added cost (90 cents; \$2.00 total) of the hollow-nose former and its recess in the base of the mould. It is assumed that the standard cherry could also be employed for flat-nose, hollow-base bullets, cut through the larger recess required for the base plug, at the same added cost, though this would require that the cherries be made with a somewhat extended shank. It is not clear why the round ball designs were also assigned the higher "special list" price (again, \$1.50); perhaps these were found to be more fragile or difficult to cut

due to the reduced "neck" for the sprue, or this may just reflect their being special-order items, provided only on request. The simplest, fixed-weight cylindrical paper-patch designs such as the pointed "Leopold" #25731, and their flat-nose and round-nose variants, were sold at the \$1.10 base price; it is not clear whether these were offered in the older two-piece moulds - the description here states "Same is cast in our [one-piece?] Cylindrical mould" - in any case these would not have required the threaded stem, nut and lock rings of the adjustable versions. These latter moulds - see #30841, #31142, #31954, etc., were offered (at the "special list" price of \$2.50) with a choice of point profiles: the ogival-pointed "Leopold", flat-point, or round-nose, and appear to have been base-pours, with the nose-former / ejector plunger (A, Fig. 11) cut correspondingly, leaving a slight step at the end of the parallel section. (Folding the patch over this step would have helped prevent tearing of the patch on seating the bullet into the chamber lead.) The nose-poured Perfection designs (at \$3.00) were even more elaborate, with a fixed cylindrical nut (B, **Figure 7**) held by a screw (A) from one side in a recess (C) in the base of the blocks, a threaded stem and base-form follower (E) extending through it for length adjustment, a lock-nut (D), and at the lower end of the stem, a (riveted on?) knurled knob. These presumably required extra-long cherries, for the maximum length bullets in each series. It is not clear whether these were cherried through the base or through the top of the blocks, though the former would have allowed for a sturdier cherry shank, if one a bit longer. These same cherries could also have allowed for production of specific, fixed-length bullets of other than standard weight (at \$1.50 "Special list", as under #25720), if "short-cherried" as base-pour bullets, cut from the top of the mould. Similar, maximum length base-pour cherries would have been used for the special-length pointed and round-nose designs. Interestingly, we have encountered one mould with what are most probably Perfection blocks, but in which the nut screwed in place against one of the blocks to carry the adjusting screw seems to have been replaced with a solid, cylindrical block, limiting the mould to a specific length / weight. Until others of this type turn up, we will not know whether this was Ideal's method of salvaging excess Perfection moulds, or a former owner's modification. Finally, as to numbering the moulds themselves, the more popular ones seem to have been marked (usually vertically, on the side face of the left-hand block) with a dedicated (and expensive!) single four-, five- or six-digit stamp. It is possible, however, that individual hand-stamped identifiers of the older sort continued to be used for less-popular, special-order or custom moulds for some time after 1896-97.

With the new numbering system in hand, it is now possible to chart the evolution of the Ideal mould line through successive issues of the Handbook; a listing of bullet designs in order of cherry number by Handbook issue from the 1896 flier through the end of Marlin production is attached (Appendix II), and should be consulted for mold type and for dates of introduction and discontinuance. Not all of the bullets in this list are discussed here, only those of particular historical or functional interest, as well as a few oddities.

Handbook No. 10 (1898) adds 48 bullets to the listing, largely in order of caliber. These appear to be mostly additions from existing stock, for earlier, less popular cartridges: the old .45 grain #228151 for the .22 Extra Long Maynard and the .299" and .386" heel-crimp bullets for the .32 and .38 Colts; bullets for the .44 caliber S&W American and Russian, Colt, Merwin, Hulbert and Evans rifles and pistols, and the .45 caliber Webleys. Noteworthy is the introduction of a soft- (or hard-) tip mould #457194 (**Figure 15**) for use with the various round-nose .45 rifle bullets such as #457124 and -125; similar tip moulds were later offered, separately or as paired sets, with standard moulds in other calibers (see below).



**Figure 15: Ideal Soft- (or Hard-) Tip Mould for Government and Marlin .45-70 Bullets**

The last two designs added by HB #10 are a #512197 solid version of the "explosive" .50 Winchester express bullet from Handbook #4, and the 475-gr. #512198 specially designed by / for the .50-70 rifles of the 7th New York National Guard Regiment marksmen. The big multi-cavity Armory mould has now has an improved stop-peg and matching hook for the sprue cutoff plate (**Figure 16**); evidently wear had been a problem here.



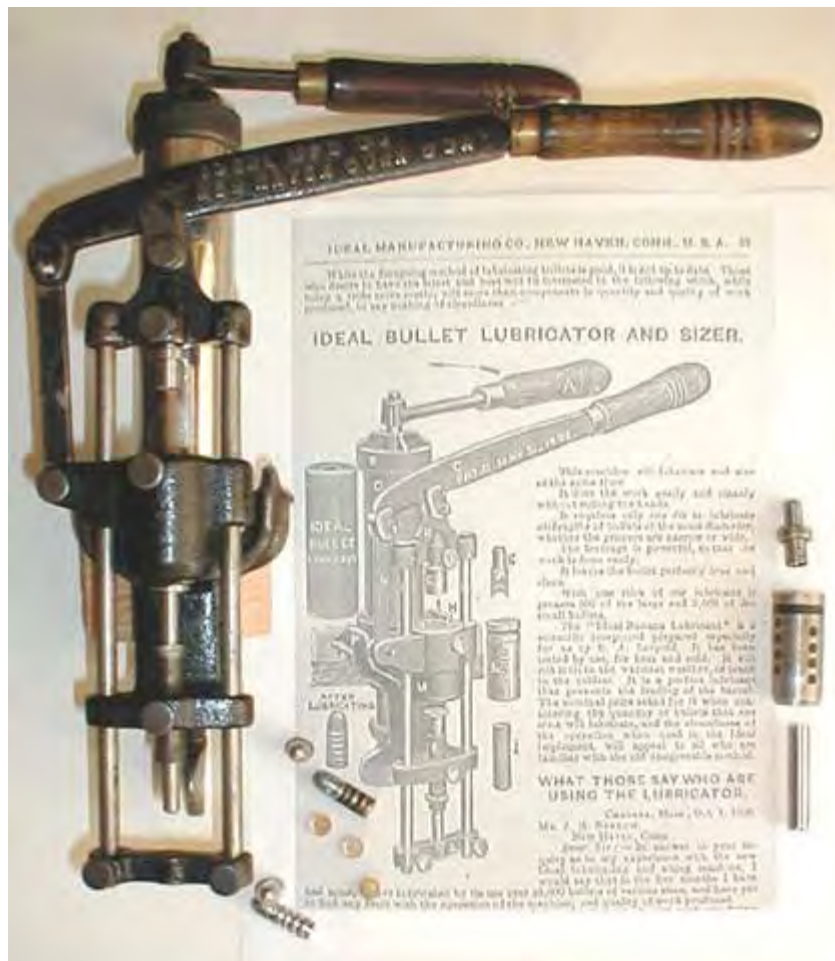
**Figure 16: Late Ideal Armory Mould, with Added Sprue-Plate Stops**

Handbook No. 11 offers the sole addition of a short-ogive, pointed #236199 in several weights, "...made in the experimental days, for the then called .236 U. S. Navy", while Handbook No. 12 (1900) skips three cherry numbers (filled in the next issue) to a 65 / 95 gr. RN #244203, now stated to be "...the only cast bullets that are correct for the 6 mm. U. S. Navy Rifle." A significant addition to the tool line is the "No. 10 Special" tong tool (**Figure 17**), an adaptation of the older No. 3 Special to accommodate the newly popular rimless cartridges by addition of a "priming hook" engaging the extractor groove to retain the case in the middle, priming aperture; "It can now be furnished for the 6 mm. U. S. Navy, 7 mm. Mauser [for rifles captured in Spanish-American War], 8 mm. [8 x 56 Sporting] Mannlicher, .303 British [huh?], and will be made for other headless shells that may be manufactured hereafter [hinting at the .30 Springfield rounds then under development]."



**Figure 17. Ideal "No. 10 Special" Tool, .30-'06 Caliber for Spitzer Bullet**

The pace picks up again with Handbook No. 13 (1901); the "blanks" above are filled in with a pair of finely-multigrooved short-nosed FP target bullets #375200 and #319201 for the .38-55 and .32-40 breech-seated Schuetzen loads, and #285202, which, along with #317204, #308206 and #311207 formed a series of designs by Horace Kephart for small-bore, fast-twist (by black powder standards) barrels, with a deep "dirt-scraper" groove ahead of the foremost of their three driving bands; these are discussed in detail in a letter from the designer on pages 39-41. Bullet #358210 is a 167-gr. RN for the new .38 S&W Military revolver, as the just-introduced .38 Special was then known (tools and moulds from this period are often stamped ".38 M"). The classic .58 "Minie" ball of the Civil War is offered as #575213 (muzzle-loading beginning to come back into vogue?), and the very blunt #410214 and the long-nosed #410219 were apparently dug out from long-stored stock, "for various .41 calibre rifles." The #429215 RN "Anderton" and the "spike-point" #429220 "Himmelwright" semi-wad-cutter design, by well-known target shooters of the day, are new additions; the FP #435218, in several weights, "...is frequently called for by owners of foreign rifles." Chas. H. Herrick, another noted turn-of-the-century shooter, designed the flat-point and sharp-nosed #285221 and -222, in weights from 90 to 180 grains, for the .28-30 Stevens; the "spitzer" version is recommended as a small-game bullet. Availability of 2, 3 and 4-cavity moulds is no longer noted; presumably these have long been superseded by the Armory moulds. The bench-mounted "Ideal Bullet Lubricator and Sizer", adapted from a Patent No. 476,175 issued in 1891 to one W. C. Stewart of Lynn, Mass., was introduced - with testimonials - on pp. 23 - 24; the engraving cut (**Figure 18**) identifies the top punch, sizing die and follower by the labels "g", "h", and "i" by which they have been known ever since.



**Figure 18. Ideal Bullet Lubricator and Sizer**

The recommended "Ideal Banana Lubricant" was "...a scientific compound prepared especially for us by E. A. Leopold.", made up into hollow sticks of the familiar form. Price was \$5.00, complete; extra top punch and die sets were \$2.00 for standard bullet sizes and shapes and \$3.00 for special designs; and lube sticks cost 20 cents each or \$1.50 per dozen.

Handbook No. 14 (1902) offers a new illustration of the standard Ideal single-cavity mould, showing the set-screw (B) for locking the sprueplate pivot screw (A), and "Dowel pin C [which] keeps both halves in alignment" (**Figure 19**, page 69), which appears to date this change.



**Figure 19. Late-Production Ideal / Marlin Mould**

This issue adds but four new bullets: #308223, a graceful RN bullet for the .30-40 by Dr. Hudson, was used by him in the matches at Sea Girt with good effect; the development of this design - with nods to Kephart, Barlow and others - is described in an extract from "Shooting and Fishing" on pages 41 - 43. Also added were the short RN #450225, specially-designed for the "old model Colt's and Remington powder and ball revolvers that were used in the Civil War, 1861 to 1865" (in case these dates were no longer taught in schools?); #313226, for the .32 S&W Long; and #285227, a new round ball to fill in a gap in the line at the 7 mm size. (As with many others of the original, numbered round-ball series, this cherry number was later "recycled" by Lyman as the #311227 for the .32 ACP and the 7.63 mm Mauser, listed from 1957 to 1978.) Handbook No. 15 (1903) introduced four more designs: #285228, a 112-gr. version of #285221 for the .28-30, with a deep hollow point: "This is a game killer and very accurate."; #257231, a three-groove version of the Kephart "dirt-scraper" for the .25s; #321232 another "dirt-scraper" with four grease grooves for the .32 Winchester Special; and #308234, with a short flat point and - again - a dirt-scraper groove, by E. P. Armstrong. Pages 29-30 offer a discussion of short-range cartridges, loads and bullets which is expanded upon in subsequent issues, and a "shell-indentor" to dimple the necks of smokeless-loaded cartridges to keep shortened bullets from being pushed back against the powder (Fig. 19) is now offered, together with fluted decapping stems to clear the indents. Handbook No. 15 was reprinted in a neat, small format in 1991 by Wolfe Publishing Co.

Handbook No. 16 (1904) represents another turning point for Ideal (we plan to make this issue available in reprint form via Cornell Publications), and something of a "high water mark" for Barlow. While twenty-six new bullet designs are listed (discussed below), over seventy older ones are relegated to a separate, illustrated "special order" list on pp. 125 - 128, at \$1.50 for plain designs and \$2.00 for hollow-points and -bases. Another thirty-plus very old or experimental designs are discontinued altogether, as indicated (without illustrations) in the index to the bullet section on p. 95. The new bullets include #338237 for the recently-introduced .33 Winchester and #358238 for the big .35 Winchester Model 1895; a 125-gr. "collar button" simulating the weight of the .44 RB, #429239; #358242 for the .38 ACP; various .30, .32, .38 and .44 caliber handgun and .30 caliber rifle bullets; the now-classic #319247 and #375248 for the .32-40 and .38-55 (from here on, bullets for these two cartridges are often introduced in pairs, or with bullets for the .32 Special); #308256, by Dr. Hudson, and -257 by Capt. H. C. Young, long and short target bullets, with "...our popular dirt catcher groove in front."; and another by Hudson, #308259, adapted to Krag chambers with oversize throats. Still another dirt-catcher design for the Krag was #313260, by Maj. George Shorkley, for oversize barrels. Hollow-point versions of the "standard".25-35 / -36, .32-40, .32 Special and .38-55 bullets were # 257266, #319261, #321265 and #375262, respectively; #412263 was another 1895 Winchester bullet, this one for the .405; # 308264 was a .30-30 bullet with a definite meplat, as preferred by Marlin (who had had bad experiences with tubular magazine blowups in earlier Government tests with the RN .45-70's); #308268 was a modification of -256, above, with a sharply-tapered front band, discussed by Hudson, with a note by Barlow, on pages 40 - 41. Oddly, no bullet design is listed, here or

elsewhere, for cherry number -240; several more cherry number "blanks" occur in subsequent issues, either errors, or - more likely - representing designs for private parties or unsuccessful efforts. Following favorable test results by the Marine Corps, a massive (25 lb.) loading press was added to the line, at \$25 set up for one cartridge, augmented by a gas-fired, three-burner melting pot holding 50 - 75 lbs. of alloy, at \$7.00 with ladle and stove-top support ring; together with the large "Armory" mould and the recently-introduced lube-sizer and the No. 5 powder measure, this set was illustrated as a "Complete Armory Outfit" on page 137.

In Handbook No. 17 (1906), though seventeen new bullets were added, over thirty of the "standard" bullets listed in HB #16, and all of the "special order" designs, were dropped; Barlow was evidently starting to "skinny down" his line, preparatory to his anticipated retirement and handover to Marlin four years later. Nevertheless, considerable innovation was evident, in both the high-power smokeless and Schuetzen arenas. Based on his Patent #847,149 (awarded in March, 1907), six rifle bullets with reduced bases for gas checks were added to the list: #308284, #308290, #308291, #319295, #375296 and #321297. Moreover, the last four of these were also offered as tip- and main-body mould pairs (a Marlin-issue set in #308291 is shown in **Figure 20**) and a tip mould was added for #308284 several years later.



**Figure 20. Marlin-made Ideal Body and Tip Mould Set for .30 Caliber Bullet No. 308291**

Both features are discussed on pages. 44 - 45, where it is clear that the tips can be made either softer (for expansion) or harder (to resist deformation) than the main body of the bullet, with which, combined with the numerous advantages adduced to the gas checks, users "...can get results that are equal to those obtained with factory ammunition, and at less cost; *at the same time they are reducing the wear on their barrels to a minimum*". Testimonials were provided by Marlin and Savage, and the NRA recommends the use of gas checks by National Guard units. Once again - as with the hollow-point designs above - the .32-40, .32 Special and .38-55 gas check bullets closely simulated the profiles and weights of the current standard bullets. Other new bullets introduced in this issue included #360270, a "Man-stopper" .38 wadcutter with a broad, shallow hollow in the nose; #375272 by Dr. Hudson with stepped bands for the .38-55 and a similar design, #319273 for the .32-40; three variant designs for the .30-40 (##308274, -278 and -279); #257283 and #257285 for the .25-20 repeater and single-shot, respectively; another .32-40 Schuetzen design, #319289; and a pair for the .32 and .35 Winchester self-loaders, #321298 and #350293. The .45 ACP short range RN #45467 is omitted, but this seems to have been an oversight, as it reappears for subsequent years. A large "No. 2 Lubricator and Sizer" matching the 25-lb. bench loading press, and using the same "g" "h" and "i" sizing die sets as the earlier one for individual users, was added to the "Armory" outfit (p. 136); the smaller unit was now was designated the "No. 1". Handbook No. 18 (1907) dropped another eighteen bullets, including the remaining Perfection and adjustable-length cylindrical paper-patch moulds, the stubby Hudson .30-40 "Sub-Skirmish" reduced-range practice bullet #308279, and the #360270 "Man-Stopper" introduced the year before. Eight gas check designs, however, were added, in .25, .30, .32, .33 and .35 caliber. A Himmelwright "spike-point" SWC in .38 caliber, #360302, matching his .44 Special design was also added, as was #360271, by B. F. Wilder, and the classic #358311 RN for the S&W and Colt .38 Special

revolvers. (These .38 Special designs seem to show some fluctuation as to indicated sizing diameter between .358" and .360", which persisted for several years to follow, probably due to the continued popularity of the older, slightly larger-bored, .38 S&W.) Only specified bullets are now available in the big multi-cavity Armory moulds; a gravity primer feed and automatic shell ejector are added to the Armory press. An illustrated chart of the 15 gas-check bullets currently available (four of them also with tip moulds) is appended at the back (p. 138) of this issue. Handbook No. 19 (1908) was John Barlow's "swan song". Two bullets from HB #17 were dropped: the #257285 for the .25-20 SS and the #308290 gas check with reduced nose diameter for .30-40 Remington and Winchester chamber throats. A medium-range plain-based RN #266324 for the 6.5 mm. Mannlicher, a gas check RN #257325 for the .25 Remington, and a heavy 190-gr. spire-point gas check #308334 for the "New Springfield .30 Caliber Model 1903, 1906 Ammunition" were added. (With respect to #257325, the Handbook states that it is "For high-velocity .25-35 Remington Automatic Rifle"; early Remington Model 08's were in fact marked "25-35" - and ".30-30" - despite the fact that they used the rimless version of these cartridges; this must have led to considerable confusion in the sporting goods store, and bad language out in the woods!).

### III: 1910 - 1915

The cover of Handbook No. 20, issued in 1910, now carries the modified address: "Ideal Manufacturing Company / (*The Marlin Firearms Co., Successor*) / New Haven, Conn. U. S. A.". Although it is not formally announced until Barlow's valedictory letter in HB #22 a year later, Barlow had transferred the "...machinery, tools, stock, fixtures and good will of the Ideal Manufacturing Company" to the Marlin Firearms Company, effective Monday, May 16th, 1910. Packaging similarly reflects the new ownership, and the tong tools are now marked "*The Marlin Firearms Co.*" in script lettering, but the mould markings remain unchanged and - in the absence of their original boxes - Marlin-made moulds cannot be distinguished from the earlier ones. Handbook format and content are also essentially unaltered, except that discussions of expanding bullets, dirt-catching grooves and soft-tip bullets are reduced or eliminated and gas-check data are expanded (pp. 31, 38 - 40, 65) and material is added on powder weight measurement units and methods (pp. 42 - 43). The specialized No. 2 tong tool for the .32-44 and .38-44 S&W target and gallery cartridges is now gone. In the mould listings, #439186 for the 11 mm. Spanish, dropped from HB #17, is now restored, but #449189 for the .45 S&W Schofield is now gone, as is Sgt. Doyle's 195-gr. RN #308274 for the .30-40. The only new designs offered are #319323, a four-groove, plain base, sharp-pointed bullet of unspecified weight by one "French" (no further data are provided here, but see below) and #285346, a RN for the 7 mm. Mauser, available in two lengths (weights again unspecified), both cut for gas checks. Mould prices are unchanged from those of the Barlow years. Handbook No. 21, reportedly issued later the same year, was unchanged in content except for the advertisements inside the front cover and at the back, the latter including several pages on Dupont powders and their applications. No new bullet designs were offered in this edition. Handbook No. 22 (1911), page 5, is prefaced by Barlow's letter quoted above; he goes on to express his confidence that "...the Ideal tools which will be made by The Marlin Firearms Co. will continue to be 'IDEAL' ". He concludes with, "Thanking all my past friends among the trade and the shooters in general for their many kindnesses, it is with feelings of regret that I say good-bye to them, and at the same time with feelings of pleasure that I recommend them to the future care of The Marlin Firearms Co. Yours respectfully, J. H. BARLOW". A section (pages 10 - 14) was added illustrating the cost advantages of reloading, using various loadings of the .32-40 cartridge. Somewhat reluctantly, Marlin agreed to provide (directly rather than through their dealer network) 25 - 50 piece samples (at from 45 to 80 cents); and 1000-piece lots of cast, lubed and sized bullets at from \$3.91 (#25728) to \$10.41 (#575213) a thousand, with \$1.00 off if sizing and lubrication is not required (pages 45 - 49). Round balls in gauges 20 - 10 were priced between \$1.00 and \$1.50 per hundred. A table showing the material cost of cast bullets by weight for various tin/lead ratios - assuming tin at 50 cents and lead at 7 cents per pound - was inserted on page 102, to encourage the reloader to make his own. The previous bullet charts are unchanged, but a "New Bullets" section on pages 136 - 137 introduces eleven new designs. Three stubby sharp-pointed plain-base bullets - ##257361, 285364 and 285365 were designed by "Ed. P. Bernard of Yokohama, Japan." The engravings of these have an inverted dotted outline of the nose inscribed within the base section (which has puzzled several of us over the years) demonstrating that "...the longitudinal center [of the bullets' lengths are] situated ahead of the first groove at a distance the width of one band." Gas check bullet #311359 for the .32-20 rifles "...when used as a single-shot." has a similar profile. The designer of the sharp-nosed, plain base #319323 introduced in the previous issue is now identified as "W. H. French, the well-known expert Schuetzen sharpshooter." The bullet is also shown in its place in the regular bullet chart, but without description or mould pricing. Semi-wadcutters #360345 and #429336 were made for J. B. Crabtree of the U. S. Revolver Club and O. E. Heath of Boston; square-nose wadcutters #360344,



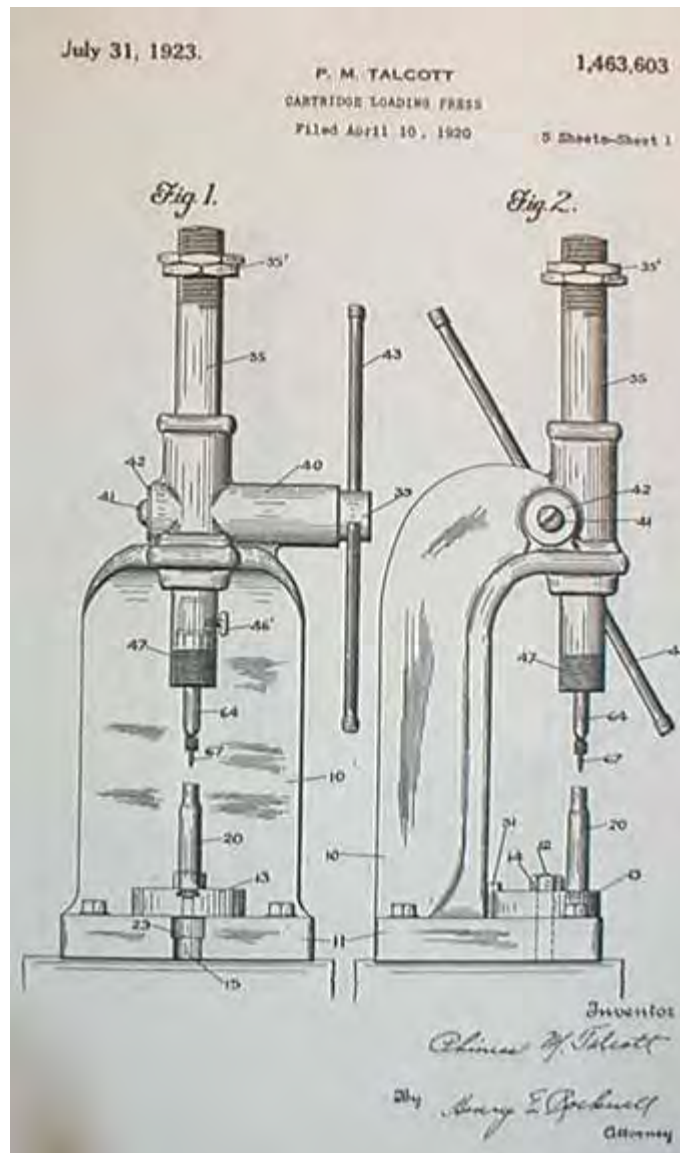
#429348 and #429352, for C. C. Crossman, Sidney E. Sears and M. L. Holman, of St. Louis; #360363 is a very light, stubby RN with hollow base for short range use in the .38 Special., and #308280, a 195-gr. plain-base with short ogival point for the 1903 and 1906 Springfield, "Is used and recommended by P. J. O'Hare" of the New Jersey National Guard" (this is "Paddy" O'Hare of O'Hare sight micrometer fame, and a regular over the decades at Camp Perry, both on the line and in "Commercial Row"). The editorial content of this issue concludes with "Ideal Experiences" (pages 144 - 146) with several letters and further testimonials from satisfied customers. Handbook No. 23 (1912) is virtually a reprint of No. 22, with only a few changes other than ads. On page 7, "To The Trade" emphasizes that on bulk sales of pre-cast bullets, "...we cannot allow any discount to dealers..."; the pre-cast bullet price list on p. 55 adds the note, "Furnished only in lots of 500 or more", though pricing is still "per M". Some new testimonials for the No. 5 and duplex No. 6 powder measures are quoted on page 55. The listing and illustrations of the round balls for shotgun use are moved to page 61 from page 103, where they are replaced by announcement of the only new bullet offered in this issue, #228367, "For the New .22 Savage H. P. Rifle." This sharp point bullet is available with a gas-check shank at "...about 60 grains.", or short-cherried to give a plain-based 53-grain version; a soft tip mould #228367-Tip is also offered, at the same \$1.50 special-list price. Otherwise, the bullet charts (including the "New Bullets" on page 137) are unchanged.

Handbook No. 24 (1913) shows considerable rearrangement of tables and data, and particularly of material relevant to shotshell reloading and powder measure usage, though total page count is essentially unchanged (145 vs. 146 for the text materials; the third page of "Ideal Experiences" is deleted). Bullets #308264 (the special Marlin .30-30 flat-point) and #45467 are dropped, the latter replaced by #452374, duplicating the standard .45 ACP jacketed bullet profile. Other new designs include a streamlined gas check spitzer #291379 for the then-popular .280 Ross (also added to the gas-checked bullet chart on p. 43 and the bullet sample sales list on page 45, but not elsewhere in the tables); the similarly-shaped #285377 for the 7 mm, #308329 for the .30-'06 and #320366 for the 8 mm; and #320378, with a similar short bearing length body, but a more rounded ogival nose. These last four bullets are not illustrated here, but verbal descriptions (weights omitted) are added to the "New Bullets" chart on pages 136 - 137. Handbook No. 25 (1914) retains the page count of the previous issue, but with minor deletions and additions and some rearrangement of the text. The discussions of outside-lubed pistol cartridges and of the various .25 caliber rifle cartridges are dropped. A note by Dr. Hudson is included on p. 38 on the changes in sources of smokeless powders resulting from the anti-trust actions to divest Dupont of its double-base powder line (which went to the new Hercules Powder Co.); and the specific powders are listed on the next page, in the powder charge tables on pp. 52 - 53 and in the Dupont and Hercules ads on pages 148 - 150 and 152 - 153 at the back of the Handbook. The .30, .32 and .35 Remington Rimless cartridges are added to the jacketed bullet / smokeless loading table on page 48 (the .25 Remington had been included in the previous issue). The conversion tables of inch fractions and metric units to decimals in inches are gone (as is the portrait of the elegantly-garbed Indian with bow and arrow that had been carried from the premier issue). Shotshell loading data have again been considerably rearranged, with new, 1914-dated quotes from "Field and Stream" and "Recreation." A table of bullet weights that formerly followed the primer selection list on p. 98 no longer appears, but the bullet cost chart by weight from 30 to 500 grains and by tin / lead ratio is still present (page 99). In the bullet charts, only #36072, the 110-gr. RN short-range bullet for the ".38 Colt's New Army and S. & W. Military" (in this case, presumably the inside-lubed, reduced-bore versions of the .38 Long Colt) revolvers has been dropped; and only one new bullet has been added: the #429383 245-grain RN for the .44 Special, slightly blunter than the #429251 for the .44 Russian, and with two deeper, square-profiled grease grooves and no separate crimping groove. But in addition, content of the former "New Bullets" pages have been melded into the main charts, with corresponding rearrangement of text and engravings; the text for the "French" #319323 has now caught up with its illustration. The 11 bullets formerly illustrated there have been inserted into their places in the caliber sequence. Of the four that were not pictured there in the last issue, an engraving for the #308329 spitzer for the .30-'06 has been made and put in sequence; but while the corresponding data for #285377, 320366 and #320378 are worked into the text, these bullets remain un-illustrated. Handbook No. 26 (1915) was the last issued by Marlin, before their resources were absorbed by the buildup for World War I production, and manufacture of the Ideal line suspended. Text page count for this issue (through the two page "Ideal Experiences" pages 144 - 145) remains the same, though two additional pages of ads are squeezed in at the front, and two more are added at the back. In the Archive issue, the Marlin ad (page 1) showing the new hammerless Model 32 .22 pump and the Models '92 and '97 lever-actions is over stamped "DISCONTINUED UNTIL FURTHER NOTICE", though other Marlin products are apparently still offered. Three pages of introductory materials ("To The Shooters", "To The Trade", and "Goods Not Exchanged") are omitted; "'Pointers' [with dogs] on How to Prepare your Own Ammunition", with its sadly crumpled .44-40 miss-load, are still there, though, and

"Reloading with Black Powder" also remains (pages 13 - 15). On p. 23, the engraving of the No. 1 lube-sizer and its accompanying descriptions and testimonials (pages 22 - 23) has been condensed, saving another page. Text continues unchanged until pages 55 - 57, where a discussion of shotshell basics is interpolated, and some redundant material on shotshell sizing is dropped between pages 63 and 64, getting the page count back on track with the preceding issue. The only other change from then on out is the addition of a new Spitzer gas-check #257388 for the .250-3000 Savage, squeezed into the lineup on page 105. A soft-tip mould is offered for it at the usual \$1.50, but the separate tip is not included in the figure. The remainder of the text (and its pagination) remains unchanged. As of the end of Marlin production, prices of the remaining types of mould remained those of the Barlow era, at \$1.10 for standard, "Regular List" moulds; "Special List" items (non-standard weights, tip moulds, etc.) at \$1.50; "Express" (hollow-point) and hollow +base moulds at \$2.00; and the big, multi-cavity "Armory" moulds at \$10.00. Gas checks were priced at \$1.00 per thousand for the popular .30 caliber, and \$1.10 - \$1.25 per M in other sizes.

#### INTERMISSION: 1916 - 1925

In his book "Marlin Firearms", Bill Brophy states (p. 22) that as U. S. industry was gearing up for World War I production, the "Marlin Gun Co." [Sic] was invited by a syndicate reportedly backed by the J. P. Morgan interests to bid on "100,000 Mauser rifles to take 7 m/m cartridges." \* Two weeks later, Marlin declined to bid, stating that "...the work...is too large to be handled by our present equipment", and that they were unwilling to undertake the necessary expansion. But by the end of 1915, Marlin's capital stock had been purchased by the syndicate from John M. Marlin's sons, Mahlon H. and J. Howard, and a new "Marlin Arms Corporation" was formed under the management of Albert F. Rockwell. At this time, production of the Ideal line was terminated, and that portion of the business sold to "Phineas Talcott, of 103 Meadow Street, New Haven." Brophy reports that Talcott "...operated the business without change, except for a thorough reorganization...to improve quality and make the business more profitable" from that time until he sold it to the Lyman Gun Sight Corporation in October, 1925. That may be - but to date no-one we have consulted has reported any Ideal hardware, packaging or literature traceable to Talcott, and the next Ideal Handbook (No. 27) was not issued until early 1926, under the Lyman imprint. The cover sheet of U. S. Patent No. 1,463,603, for an arbor press type, offers one tantalizing hint rack-and-pinion actuated "Cartridge Loading Press", issued to Phineas M. Talcott of Branford, Connecticut (a community eight miles east of New Haven) on July 31, 1923. The patent is signed by one "Henry E. Rockwell" (**Figure 21**), as Talcott's attorney.



**Figure 21. Phineas Talcott Loading Press Patent; Note "Henry E. Rockwell" Attorney Signature**

No tool matching the very detailed drawings in this patent has been reported to date (although others made during the 1920s utilize similar principles), nor does it resemble any of the tools later issued by Lyman. In any case, there was a great dearth of handloading tools in the years immediately following the end of the War in November, 1918. An article in the March 15, 1920 issue of the NRA organ "Arms and the Man" by Townsend Whelen entitled "New Reloading Tools at Last", introducing the [Modern]-Bond "nutcracker" loading tool and accessories, states: "Since the beginning of the War it has been practically impossible to obtain reloading tools." Talcott's production, if any, cannot have been significant.

- So far as we are aware, none of the major belligerents in World War I used the 7 m/m Mauser cartridge; this bid solicitation may have been a "teaser" for the contract actually let in 1915 to the firm of Hopkins & Allen for production of 7.65 mm Model 1889 Mauser rifles for the Belgian government; unanticipated costs for labor and materials in the run-up to the U. S. entry into WW I led H&A into bankruptcy in 1917, and absorption of its production facilities into the Marlin Arms complex, soon reorganized once again as the Marlin-Rockwell Corporation.

#### ADDENDUM

#### MODIFIED "PERFECTION" MOULDS

In the "digression" on mould manufacturing techniques in Section II, mention was made of a mould evidently made using a nose-pour "Perfection" as a basis, in which the adjustment nut screwed to the right-hand block was replaced by a solid, cylindrical plug providing a specific fixed-weight and -length bullet. Another such mould is illustrated in Figure 22. The plug is screwed tightly in place, and its domed lower end protrudes slightly below the bottom face of the blocks.



**Figure 22. Perfection Mould modified for use as a "fixed weight" mould**

Further, several examples have surfaced, using a similar plug shaped to form a hollow-based bullet; in this case the plug is more loosely attached by the screw, so that on opening the mould, the plug and the just-cast bullet separate from the right-hand block and the bullet can be shaken free; an example casting the short 110-grain gallery HB bullet #429104 is seen in Figure 23. Again, the lower end of the base-forming block is rounded and protrudes slightly from the bottom of the mould when closed. It now appears that this was Barlow's method for forming HB bullets, at least those with relatively shallow, broad hollows, rather than the removable core plug used with hollow-points.



**Figure 23. #429104 Hollow Base mould with fixed HB pin. This was the earlier method of making HB moulds.**

Both versions thus would appear to be legitimate, factory adaptations of the basic "Perfection" mould.

## APPENDIX I

IDEAL MANUFACTURING CO. FLYER, Ca. 1896

This double-sided flyer (provided courtesy of ARTCA member Albert Krause) shows illustrations of and provides

descriptive information for specific bullets designed or adapted to the newly-popular "high-power", smokeless-powder .25 and .30 caliber cartridges recently offered by Winchester, Marlin and the U. S. and British military. It is of interest, not only in its own right, but also in that the illustration numbers (1 through 21) were used, beginning in Ideal Handbook No. 9 of 1897, as the initial "cherry numbers" in the new "caliber + cherry number" cataloging scheme for the Ideal bullet mould line. (This chart also appeared, in reduced form, as a "sidebar" on p. 149 in Kenneth L. Walters' article, "A Historical Look at Lyman Cast Bullet Designs", Pages 148 - 153 in Lyman Reloading Handbook No. 46 of 1982, an excellent introduction to the subject).

## APPENDIX II

### CHART OF IDEAL AND MARLIN-IDEAL MOULDS, 1896 - 1915, BY CHERRY NUMBER

This chart lists those moulds offered by the Ideal Manufacturing Co., and the Marlin Firearms Company in their lists and Handbooks from approximately 1896 (the 21 bullets displayed and numbered in Appendix I) through the end of Marlin production in 1915 (HB No. 26). The listing is in order of cherry number, as given in the second column, since these numbers are in approximate chronological sequence over that period; the "size-to" bullet diameters are given in the first column. Handbook numbers and their approximate issue dates (as provided by Phil Wahl) head each of the subsequent columns, an "X" indicating the presence of that bullet design in the given issue. The bracketed [X] indicates those moulds pictured and listed as "special order" items on Pages 125-128 of Handbook No. 16 (1904), "...some of which were standard formerly, but now have been superseded by others because of requirements brought about by the use of modern smokeless powder". Others are for old style rifles [and pistols], many of which are still in use. A parenthesized (X) indicates those designs listed in the "Index to Illustrations of Bullets" on Page 95 of that issue, but not displayed or discussed in the standard or special list charts, Pages 96 through 128. None of the designs in these two groups are shown in subsequent issues of the Handbook.

The engraving cuts and descriptive material for these designs are too voluminous to present here (except for those in Appendix I); for most of the listed designs, these may be found on the CASTPICS website ([www.castpics.net/research](http://www.castpics.net/research) and data) as taken from Ideal Handbook No. 9 [1897] and the Lyman "Cast Bullet Handbook", 2nd Edition of 1973. Useful descriptive material - though in most cases not their weights - may be found for some in the 1958 First edition "Handbook of Cast Bullets". Illustrations and data for others not covered in these resources may be obtained as scans from the relevant Handbooks, on application to the author, at <[floodgate@pacific.net](mailto:floodgate@pacific.net)>.

The third column of the table lists only the *type(s)* of the mould provided for the bullet in question; i.e., its construction features. No symbol indicates that the mould is of the standard, two-part, fixed-block, base-pour design, although the mould may be cherried to different depths, either as a "regular list" (for commonly used weights) or as a "special list" item, to produce bullets of differing weights. Of the other symbols:

A - Indicates those moulds also listed as regularly available as "Armory" multi-cavity moulds in Handbooks Nos. 18 through 25;

C - indicates a cylindrical fixed-weight mould for paper-patching; it is not clear whether these are one- or two-piece moulds;

C/A - indicates an adjustable, one-piece, base-pour cylindrical mould; different nose-formers for flat, round or "Leupold" nose configurations can be provided, as requested;

C,HB - indicates a nose-pour mould (probably of two-piece design) having a hollow-base former to provide a recess for the folded patch;

C,HP - indicates a base-pour mould (again, probably two-piece) with a hollow-point nose former;

G - Indicates a mould with base stepped for gas checks (first appearing in or following Handbook No. 17 of 1906);

HB - indicates a nose-pour mould with a hollow-base former;

HP - indicates a base-pour mould regularly listed with a hollow-point former (on special order, it appears that these could be provided for any base-pour mould);

P - indicates a two-piece, nose-pour "Perfection" mould with adjustable base follower for weights as desired; these were discontinued after Handbook No. 17 of 1906;

RB - indicates a round-ball mould; over the period covered here, these were considered standard bullets for gallery use;

T - indicates a mould (often as part of a set) casting a separate tip with a "dovetail" extension, to be dropped into a standard mould filled with a different alloy to provide a nose of softer (for expansion) or harder (to avoid "slumping") temper than that of the main bullet body. Two of these (#257306T and #308284T) were added at a later date (HB Nos. 24 and 26) than the "parent" designs.

# .30 CALIBRES, .25-35 W. AND .25-36 M. SMOKELESS.

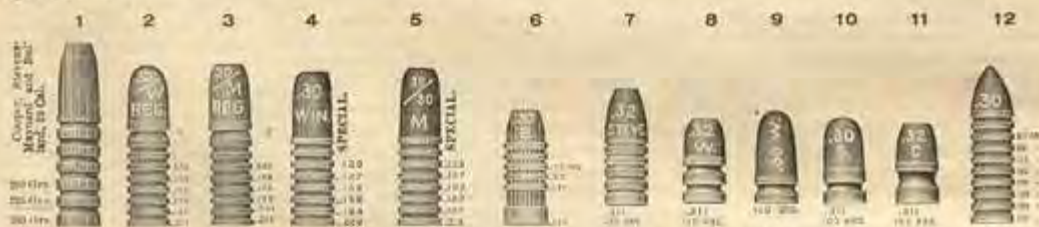
## QUESTIONS ASKED ABOUT THEM.

Have you a light weight bullet I can use in my 30 calibre rifle? Can you furnish mould for sharp pointed ball, 30 calibre? Will my 30-30 smokeless rifle handle black powder and lead ball? What different weights and shape of ball can you furnish moulds for 30-40 U. S. Army Rifle? Will you send me samples of different bullets that you can furnish moulds for my 25-30 smokeless rifle? Etc., etc.

The above questions have become so frequent, that to answer them quickly and the same to all, we have arranged this circular and prepared illustrations of a variety of bullets of different shapes and weights from which those who are interested, may select. We can furnish moulds for each weight of bullet illustrated. We have numbered each bullet or series of bullets, and described each under separate paragraphs designated by the bullet number. We would remark that we have furnished moulds and tools for all of these, with various results reported. The same bullet used in some kind of rifle in the hands of various people, is sure of varying results being reported, which plainly shows that what is just right for one man, does not suit another, so our opinion on this, that of the other is not given. We guarantee nothing except that the tools will make and seat the bullets all right in the shells that they may be ordered for. The practical judgment of the shooter will cause him to select a bullet for whatever purpose he may desire. The results of the experiments depend much upon the shooter themselves, what powder they use, what lubrication, what temper, what length or weight of bullet and the distance they desire to shoot, the twist of the rifling, etc., etc. We will send sample of any of the following bullets on receipt of 2 cents each, for postage, etc. We do not keep them in quantities and can furnish only one each as a sample.

Kindly note remarks under the head of each bullet number. Perfection moulds can only be furnished for bullets whose sizes are stated below. We here give the standard size of bullets in thousandths of an inch.

.311 is the proper diameter for bullets to fit the following arms: 32-20 Marlin, Colt's and Winchester repeating and single shot rifles, also for the 32-35 Stevens and Maynard, as well as the so called .303 Ely (English arms). .308 is the correct diameter of bullet for the 32-40 Remington, 30-30 Marlin and Winchester, 30-40 U. S. Army, 303 Savage and others. .257 is correct for all the 25 calibre using central fire ammunition; thus, long or short, light or heavy, 25 calibre bullets of whatever length or shape are correct, so far as diameter, the interchanging in any of the variety of 25 calibre arms.



**No. 1** Bullet when cast is .311 in diameter, which is correct for the .303 Ely (English). When sized to .308 the 200 or 225 grains weight are well balanced bullets for the 30 U. S. Gov. Price of mould for either weight, \$1.50.

**No. 2** Bullet when cast is also .311; it sizes to .308. The shell is intended to crimp into the top groove at 90° same as in the standard metal jacketed ball; the forward part of shoulder rests on the end of shell to prevent ball recoiling. Chamber that is correct for the metal patched ball 30-30-160 Winchester will also seat this. Price of single mould any weight as designated, \$1.50. Perfection mould to cast the whole series with flat point, \$5.00.

**No. 3** Bullet when cast is .311; it sizes to .308. It is similar to No. 2 except in weights and having flat point. This will seat correctly in chambers that are for the 30-30-160 Marlin metal patched ball. Price of mould for any of the above weights, \$1.50. Perfection mould to cast the series, \$5.00.

**No. 4** Bullet when cast is slightly above .308. When loaded in the regular 30-30 W. chamber, shell crimps over all the bands. Single mould will form a bullet round pointed like No. 2. Price any weight, \$1.50. Perfection mould forms flat point on the whole series like illustration; price \$5.00.

**No. 5** Bullet is also cast slightly above .308, is similar to No. 4 except form of the point in all cases is flat conforming to the shape of the 30 Marlin metal patched ball, and the one chamber is correct for both. Price of single mould any weight, \$1.50. Perfection mould for the series, \$5.00.

**No. 6** Bullet when cast is .311. This bullet was designed by Mr. Beardsley, of the Bridgeport Gun Implement Co. Fine reports have been received from this full length bullet, when using full charge of black powder in the 30 calibre rifles, when sized to .308. The lighter weights are reported fine for short range using bullets either of the .311 or .308 diameter. Price of single moulds any of the weights, \$1.50 each.

**No. 7** Bullet is the old 32-35-153 Stevens .311. It may be sized down to .308. Price of mould, \$1.50.

**No. 8** Bullet is the standard 32-20-115 Winchester .311. It sizes down to .308 nicely. Price of single mould, \$1.50.

**No. 9** Bullet is the 30-30-100 Sharp's range, Winchester .308. Note length of point as compared with length of bearing. Some shooters criticise the balance of this bullet. It has but one groove for lubrication and has a deep hollow base. Price of mould, \$2.00.

**No. 10** Bullet is the 303-100 Savage miniature, and is cast .311. It has but one groove, a trifle longer bearing than the No. 9, and a shorter point, (round,) to be sized to .308. Price of mould, \$1.50.

**No. 11** Bullet is the regular 32-20-100 Marlin and Colt's (.311). It has but one groove, a trifle longer bearing than the No. 10 and shorter point (flat). It may be sized nicely to .308. Price of mould, \$1.50.

**No. 12** Bullet when cast is .311. Here is a fine series of short range bullets that are well balanced; they present a good length of bearing and sufficient grooves to lubricate the barrel. All of our short sharp pointed bullets of the different calibres have justly earned their reputation for accuracy and for small game killing, they do not mangle or tear. It has also been proven that bullets of this shape, when longer and heavier than bullets of other shapes, will fly more accurately and keep point on for a greater distance. We would remark also that it is claimed that bullets, having a good length of bearing, with lubrication properly distributed, will hold the rifling better, and are not so apt to jump the twist and leave the barrel as they have a greater length of grip.







A L I B E R	H E R R Y	Y P E	L Y E R	B 9	B 10	B 11	B 12	B 13	B 14	B 15	B 16	B 17	B 18	B 19	B 20	B 21	B 22	B 23	B 24	B 25	B 26	
313	56			X	X	X	X	X	X	X	X											
313	57			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
313	58	RB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
323	59			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
323	60	P		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
323	61			X	X	X	X	X	X	X	X											
323	62			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
323	63	RB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
358	64			X	X	X	X	X	X	X	(X)											
358	65			X	X	X	X	X	X	X	(X)											
358	66	RB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
454	67			X	X	X	X	X	X	X	X		X	X	X	X	X	X				
454	68	HB		X	X	X	X	X	X	X	X											
454	69	RB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
358	70	HB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360	71			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
360	72	A		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
360	73			X	X	X	X	X	X	X	X											
360	74	RB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
362	75			X	X	X	X	X	X	X	(X)											
375	76			X	X	X	X	X	X	X	(X)											
375	77	HP		X	X	X	X	X	X	X	(X)											
375	78			X	X	X	X	X	X	X	X											
375	79	P		X	X	X	X	X	X	X	X	X										
375	80			X	X	X	X	X	X	X	(X)											
375	81			X	X	X	X	X	X	X	(X)											
375	82			X	X	X	X	X	X	X	(X)											
375	83			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
375	84	P		X	X	X	X	X	X	X	X	X										
375	85			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
375	86			X	X	X	X	X	X	X	X	X										
375	87	RB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
375	88	C		X	X	X	X	X	X	X	[X]											
375	89	C/A		X	X	X	X	X	X	X	X	X										
400	90	HP		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
400	91	RB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
403	92	P		X	X	X	X	X	X	X	X	X										
403	93	HP		X	X	X	X	X	X	X	X	X										
403	94	P		X	X	X	X	X	X	X	X											
403	95			X	X	X	X	X	X	X	(X)											
403	96	P		X	X	X	X	X	X	X	X											
403	97	RB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
424	98			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
424	99	HP		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
424	100			X	X	X	X	X	X	X	(X)											
424	101	RB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
424	102	HB		X	X	X	X	X	X	X	(X)											
427	103			X	X	X	X	X	X	X	(X)											
429	104	HB		X	X	X	X	X	X	X	X											
429	105			X	X	X	X	X	X	X	X											
429	106			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
429	107	HB		X	X	X	X	X	X	X	X											
429	108	RB		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
446	109			X	X	X	X	X	X	X	(X)											
446	110	HP		X	X	X	X	X	X	X	(X)											
Y E A R				1 8 9 6	1 8 9 7	1 8 9 8	1 8 9 9	1 9 0 0	1 9 0 1	1 9 0 1	1 9 0 3	1 9 0 4	1 9 0 6	1 9 0 7	1 9 0 8	1 9 0 0	1 9 0 1	1 9 0 1	1 9 0 2	1 9 0 3	1 9 0 4	1 9 0 5





Y E A R			1 8 9 6	1 8 9 7	1 8 9 8	1 8 9 9	1 9 0 0	1 9 0 1	1 9 0 1	1 9 0 3	1 9 0 4	1 9 0 6	1 9 0 7	1 9 0 8	1 9 1 0	1 9 1 1	1 9 1 2	1 9 1 3	1 9 1 4	1 9 1 5		
C A L I B E R	C H E R R Y	T Y P E	F L Y E R	H B 9	H B 1 0	H B 1 1	H B 1 2	H B 1 3	H B 1 4	H B 1 5	H B 1 6	H B 1 7	H B 1 8	H B 1 9	H B 2 0	H B 2 1	H B 2 2	H B 2 3	H B 2 4	H B 2 5	H B 2 6	
429	220	A						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
285	221	P						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
285	222							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
308	223								X	X	(X)											
308	224										[X]											
450	225								X	X	X	X	X	X	X	X	X	X	X	X	X	X
313	226								X	X	X	X	X	X	X	X	X	X	X	X	X	X
285	227	RB							X	X	X	X	X	X	X	X	X	X	X	X	X	X
285	228	HP								X	X	X	X	X	X	X	X	X	X	X	X	X
308	229										[X]											
225	230										[X]											
257	231	P								X	X	X	X	X	X	X	X	X	X	X	X	X
321	232									X	X	X	X	X	X	X	X	X	X	X	X	X
308	233										[X]											
308	234									X	X											
457	235										[X]											
323	236										[X]											
338	237										X	X	X	X	X	X	X	X	X	X	X	X
358	238										X	X	X	X	X	X	X	X	X	X	X	X
429	239										X	X	X	X	X	X	X	X	X	X	X	X
308	241	A									X	X	X	X	X	X	X	X	X	X	X	X
358	242										X	X	X	X	X	X	X	X	X	X	X	X
311	243										X	X	X	X	X	X	X	X	X	X	X	X
308	244										X	X	X	X	X	X	X	X	X	X	X	X
308	245	A									X	X	X	X	X	X	X	X	X	X	X	X
358	246										X	X	X	X	X	X	X	X	X	X	X	X
319	247										X	X	X	X	X	X	X	X	X	X	X	X
375	248										X	X	X	X	X	X	X	X	X	X	X	X
313	249										X	X	X	X	X	X	X	X	X	X	X	X
358	250										X	X										
429	251										X	X	X	X	X	X	X	X	X	X	X	X
308	252										X	X	X	X	X	X	X	X	X	X	X	X
244	253										[X]											
313	254										[X]											
308	255										[X]											
308	256										X											
308	257										X											
400	258										[X]											
308	259										X											
313	260	P									X											
319	261	HP									X	X	X	X	X	X	X	X	X	X	X	X
375	262	HP									X	X	X	X	X	X	X	X	X	X	X	X
412	263										X	X	X	X	X	X	X	X	X	X	X	X
308	264										X	X	X	X	X	X	X	X	X	X	X	X
321	265										X	X	X	X	X	X	X	X	X	X	X	X
257	266										X	X	X	X	X	X	X	X	X	X	X	X
441	267										[X]											
308	268										X											
360	270	HP										X										
360	271												X	X	X	X	X	X	X	X	X	X
375	272												X	X	X	X	X	X	X	X	X	X
319	273												X	X	X	X	X	X	X	X	X	X
308	274	A											X	X	X							



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